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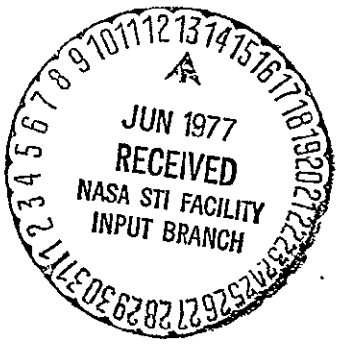
AN ATLAS OF 1975 GEOS-3 RADAR ALTIMETER DATA FOR HURRICANE/TROPICAL DISTURBANCE STUDIES

Volume II

H. Ray Stanley
NASA Wallops Flight Center
Wallops Island, Virginia 23337

and

Barbara Chan & John R. Munson
EG&G/Washington Analytical Services Center, Inc.
Wolf Research and Development Group
P.O. Box 476
Pocomoke City, Maryland 21851



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16. Abstract

This document's primary purpose is to provide the means for locating and extracting GEOS-3 altimeter data acquired for the analysis of specific hurricanes, tropical storms and other disturbances. This data is also expected to be extremely useful in the analysis of the behavior of the altimeter instrument in the presence of severe meteorological disturbances as well as provide a data base which can be useful in the resolution of apparently anomalous geoid or sea surface characteristics. Geographic locations of 1975 hurricanes and other tropical disturbances have been correlated with the closest approaching orbits of the GEOS-3 satellite and its radar altimeter. The disturbance locations and altimeter data were gathered for a seven-month period beginning with GEOS-3 launch in mid-April 1975. Areas of coverage were the Atlantic Ocean, the Carribean, the Gulf of Mexico, the west coast of the continental United States, and the central and western Pacific Ocean. Volume I contains disturbance coverage data for the Atlantic Ocean, Gulf of Mexico, and Eastern Pacific Ocean. Central and Western Pacific coverage is documented in Volume II.

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4.0 CENTRAL AND WESTERN PACIFIC AREAS

4.1 General

Much of the data on the storms occurring in these areas were extracted from Tropical Disturbance Classification Worksheets. Since the coding system used was not clearly understood by the preparer of this document (no accompanying legend or definitions were provided) and the sheets not readable in some places, the information contained in this section is incomplete as presented. Therefore, it was decided to include all of the worksheets in Appendix A, for reference purposes.

Storms as identified on the worksheets are listed below together with their periods of occurrence.

. Tropical Disturbance (TD-02)	(4/19/75-4/28/75)
. Tropical Disturbance (No Name-A)	(7/21/75-7/25/75)
. "Mamie" (TD-03)	(7/26/75-7/30/75)
. "Nina" (TD-04)	(7/31/75-8/4/75)
. Tropical Disturbance (TD-05)	(8/4/75-8/6/75)
. "Ora" (TD-06)	(8/9/75-8/12/75)
. "Phyllis" (TD-07)	(8/12/75-8/17/75)
. Storm No Name-B	(8/13/75-8/16/75)
. "Rita" (TD-08)	(8/16/75-8/23/75)
. "Susan" (TD-09)	(8/24/75-9/1/75)
. "Tess" (TD-10)	(8/31/75-9/9/75)
. "Viola" (TD-11)	(9/4/75-9/8/75)
. "Winnie" (TD-12)	(9/7/75-9/12/75)
. "Alice" (TD-13)	(9/15/75-9/20/75)
. "Betty" (TD-14)	(9/16/75-9/23/75)
. "Cora" (TD-15)	(10/1/75-10/6/75)
. "Doris" (TD-16)	(10/3/75-10/6/75)
. "Elsie" (TD-17)	(10/9/75-10/15/75)
. Tropical Disturbance (TD-18)	(10/14/75-10/20/75)
. "Flossie" (TD-19)	(10/20/75-10/23/75)

Table 4-1 is a complete listing of all tropical cyclones occurring in the Pacific Area during the calendar year 1975, with the exception of Typhoon Lola (Storm #01) which occurred several months prior to GEOS-3 launch. Several other storms, not included on the above list, are included in Table 4-1. These are: Typhoons Ida and June, Tropical Storms Grace and Helen, and two tropical depressions (TD24 and TD25). Table 4-1 contains information of general interest concerning these storms including storm number, type, name (if assigned one), period of warning, maximum wind velocity, minimum pressure (SLP), etc.

Detailed meteorological information has also been made available for certain of the Pacific storms and is included in this document. Meteorological summaries are provided for the following:

- Typhoon "Lola"
- Typhoon "Nina"
- Typhoon "Ora"
- Typhoon "Phyllis"
- Typhoon "Rita"
- Typhoon "Tess"
- Typhoon "Winnie"
- Typhoon "Alice"
- Typhoon "Betty"
- Typhoon "Cora"
- Typhoon "Elsie"
- Typhoon "Flossie"
- Typhoon "Ida"
- Typhoon "June"

In the cases of Ida, June, Grace, Helen, TD24, and TD25, no detailed information concerning their day-to-day locations was provided. However, general track maps were provided. Therefore, these maps were used to estimate the positions of these storms.

TABLE 4-1. 1975 PACIFIC AREA TROPICAL CYCLONES (APRIL - DECEMBER)

STORM*	TYPE	NAME	PERIOD OF WARNING	CALENDAR DAYS OF WARNING	MAXIMUM (SFC) WIND VELOCITY (KTS)	MINIMUM SLP (MBS)	NO. OF WARNINGS		DISTANCE TRAVELED (NM)
							TOTAL	AS TYPHOON	
02	TD	---	23 APR-28 APR	6	25	004	19	---	605
03	TS	MAMIE	27 JUL-29 JUL	3	40	994	10	---	774
04	TY	NINA	31 JUL-04 AUG	5	135	904	15	8	1084
05	TD	---	06 AUG-07 AUG	2	30	---	4	---	293
06	TY	ORA	10 AUG-12 AUG	3	65	976	10	4	630
07	TY	PHYLLIS	12 AUG-18 AUG	7	120	920	27	15	1622
08	TY	RITA	18 AUG-23 AUG	6	80	966	23	7	1465
09	TS	SUSAN	(See Note 1)	6	50	---	19	---	816
10	TY	TESS	02 SEP-10 SEP	9	95	945	33	22	1613
11	TS	VIOLA	05 SEP-07 SEP	3	45	996	10	---	416
12	TY	WINNIE	09 SEP-12 SEP	4	65	---	13	4	1188
13	TY	ALICE	16 SEP-20 SEP	5	75	971	18	5	1316
14	TY	BETTY	17 SEP-23 SEP	7	95	944	26	11	1785
15	TY	CORA	01 OCT-06 OCT	6	105	943	21	11	2376
16	TS	DORIS	03 OCT-06 OCT	4	55	---	10	---	470
17	TY	ELSIE	09 OCT-15 OCT	7	135	900	25	14	1656
18	TD	---	15 OCT-17 OCT	3	30	002	8	---	432
19	TY	FLOSSIE	20 OCT-23 OCT	4	70	977	15	4	798
20	TS	GRACE	25 OCT-02 NOV	8	60	994	29	---	1940

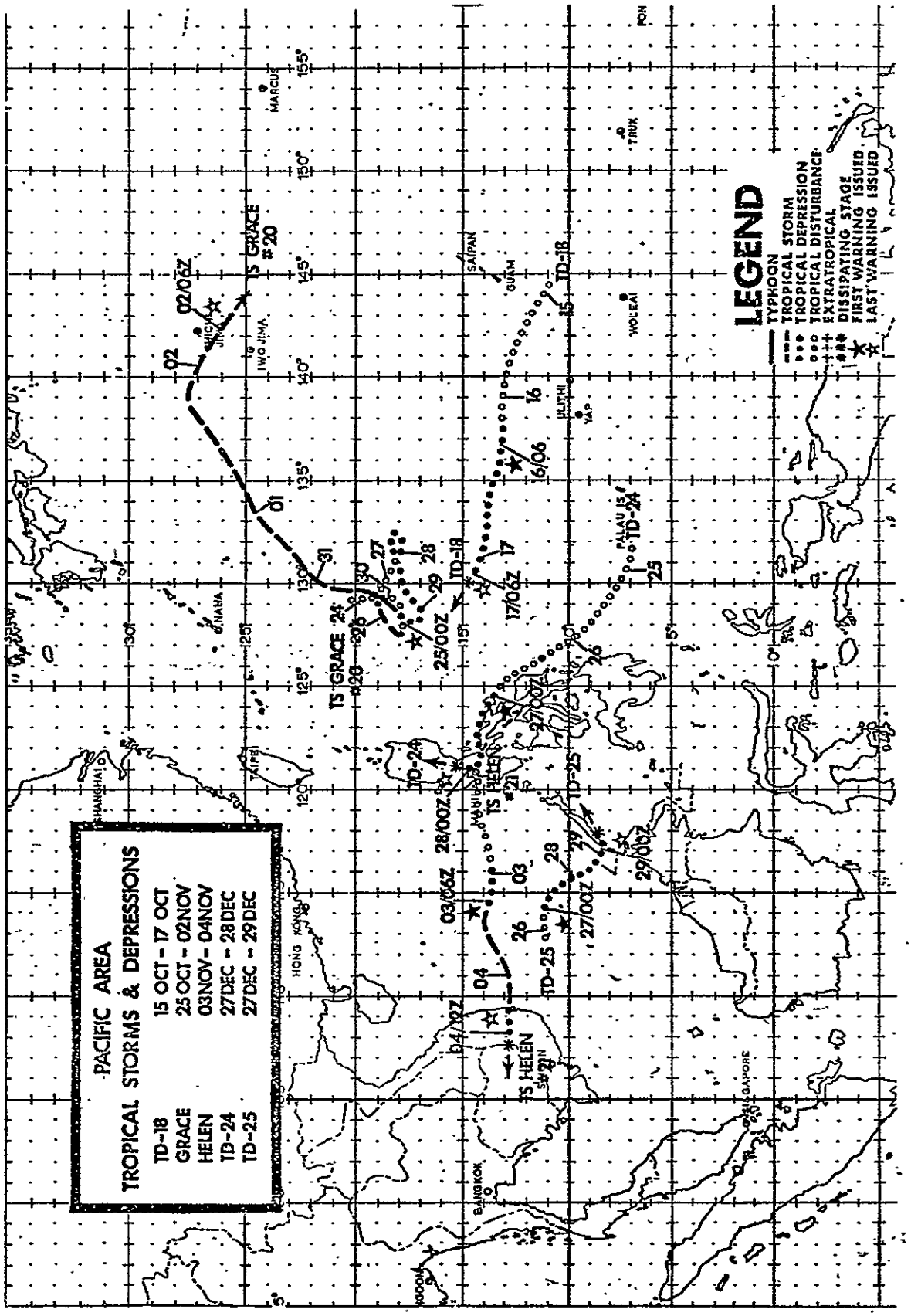
TABLE 4-1. 1975 PACIFIC AREA TROPIC CYCLONES (APRIL - DECEMBER) (Cont'd)

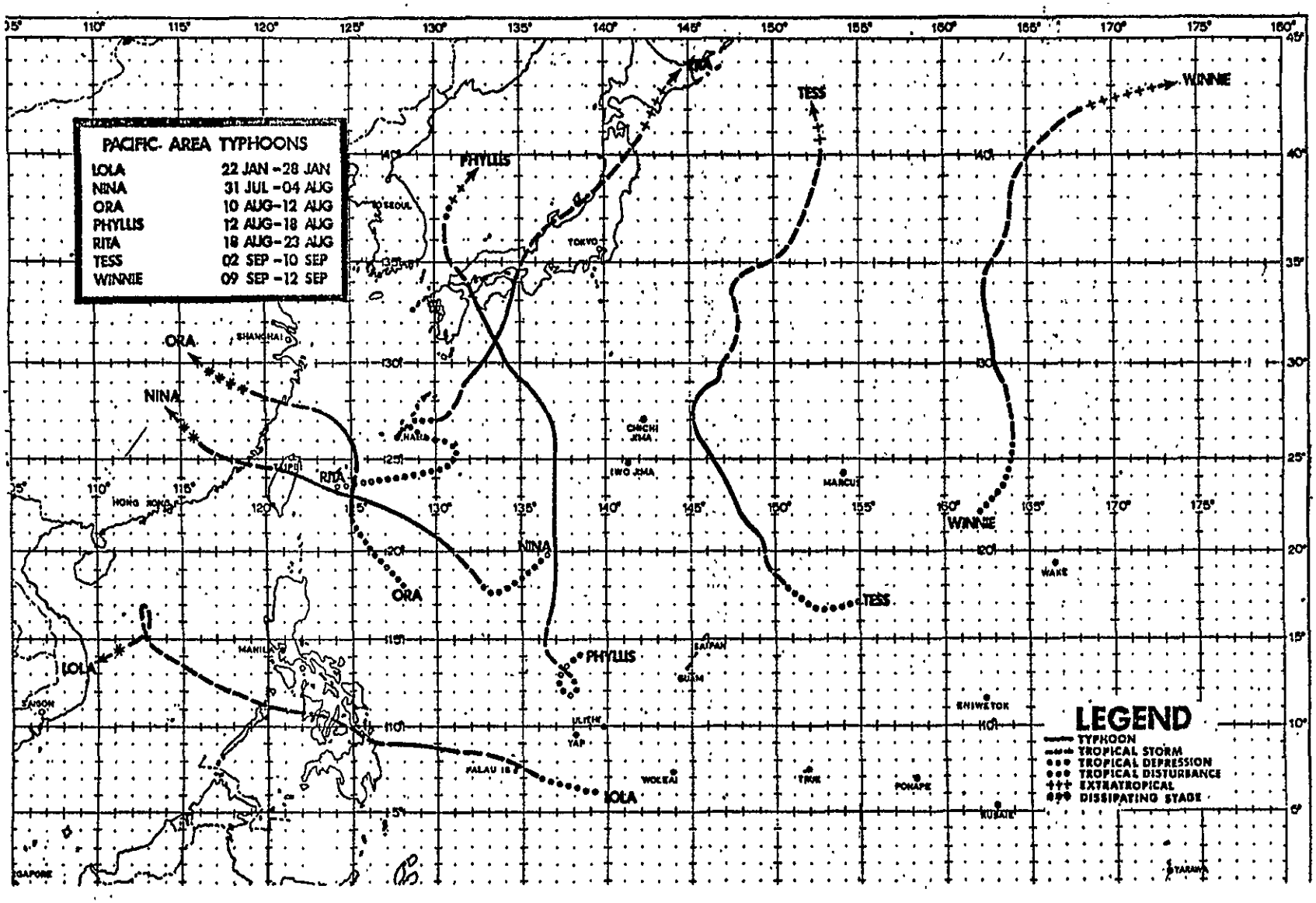
STORM*	TYPE	NAME	PERIOD OF WARNING	CALENDAR DAYS OF WARNING	MAXIMUM (SFC) WIND VELOCITY (KTS)	MINIMUM SLP (MBS)	NO. OF WARNINGS		DISTANCE TRAVELED (NM)
							TOTAL	AS TYPHOON	
21	TS	HELEN	03 NOV-04 NOV	2	45	998	6	---	375
22	TY	IDA	06 NOV-11 NOV	6	85	959	22	8	1865
23	TY	JUNE	16 NOV-24 NOV	9	160	876	32	25	2641
24	TD	---	27 DEC-28 DEC	2	30	---	5	---	211
25	TD	---	27 DEC-29 DEC	3	30	---	10	---	227

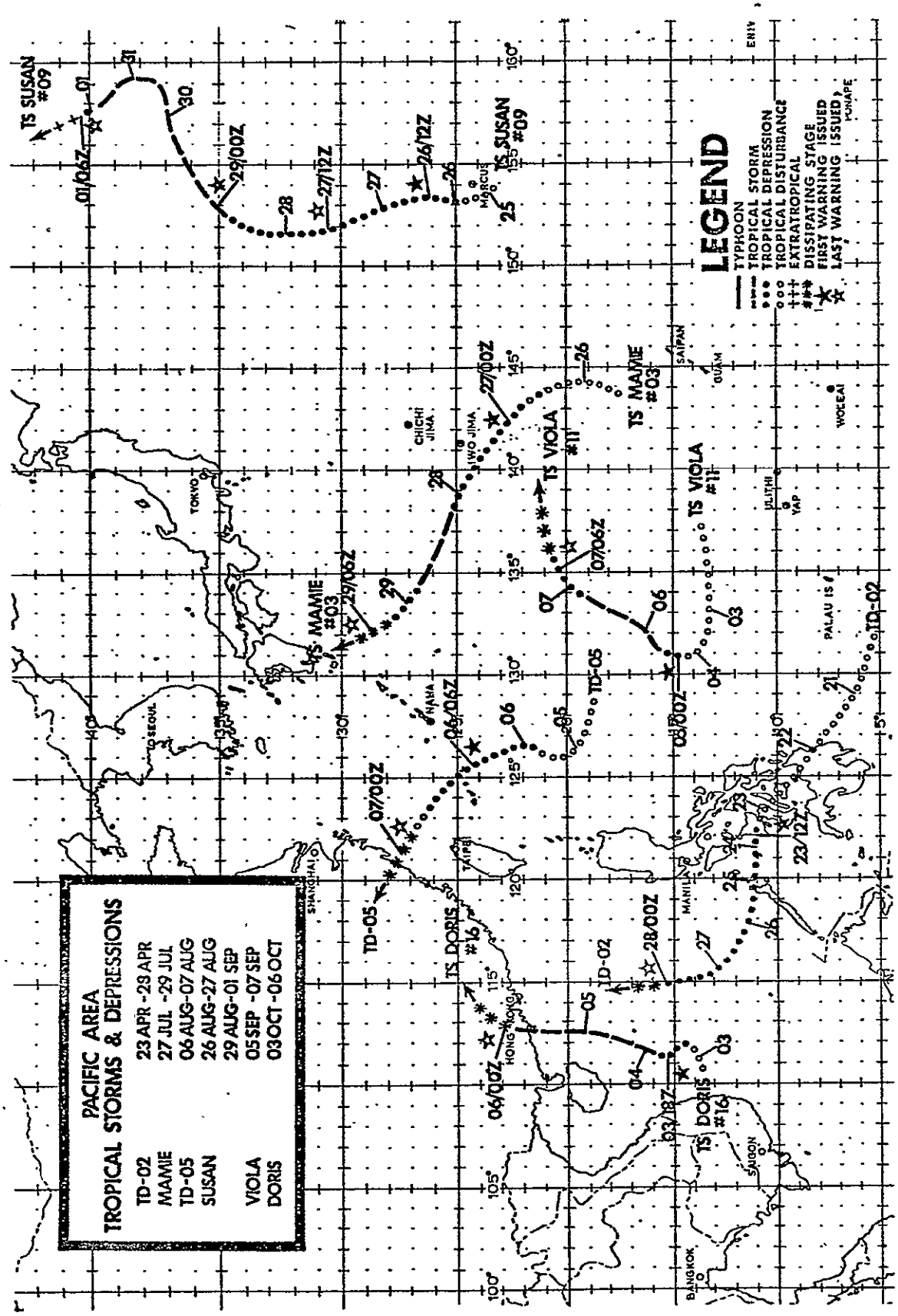
Note 1: SUSAN 26 AUG & 27 AUG AND 29 AUG - 01 SEP

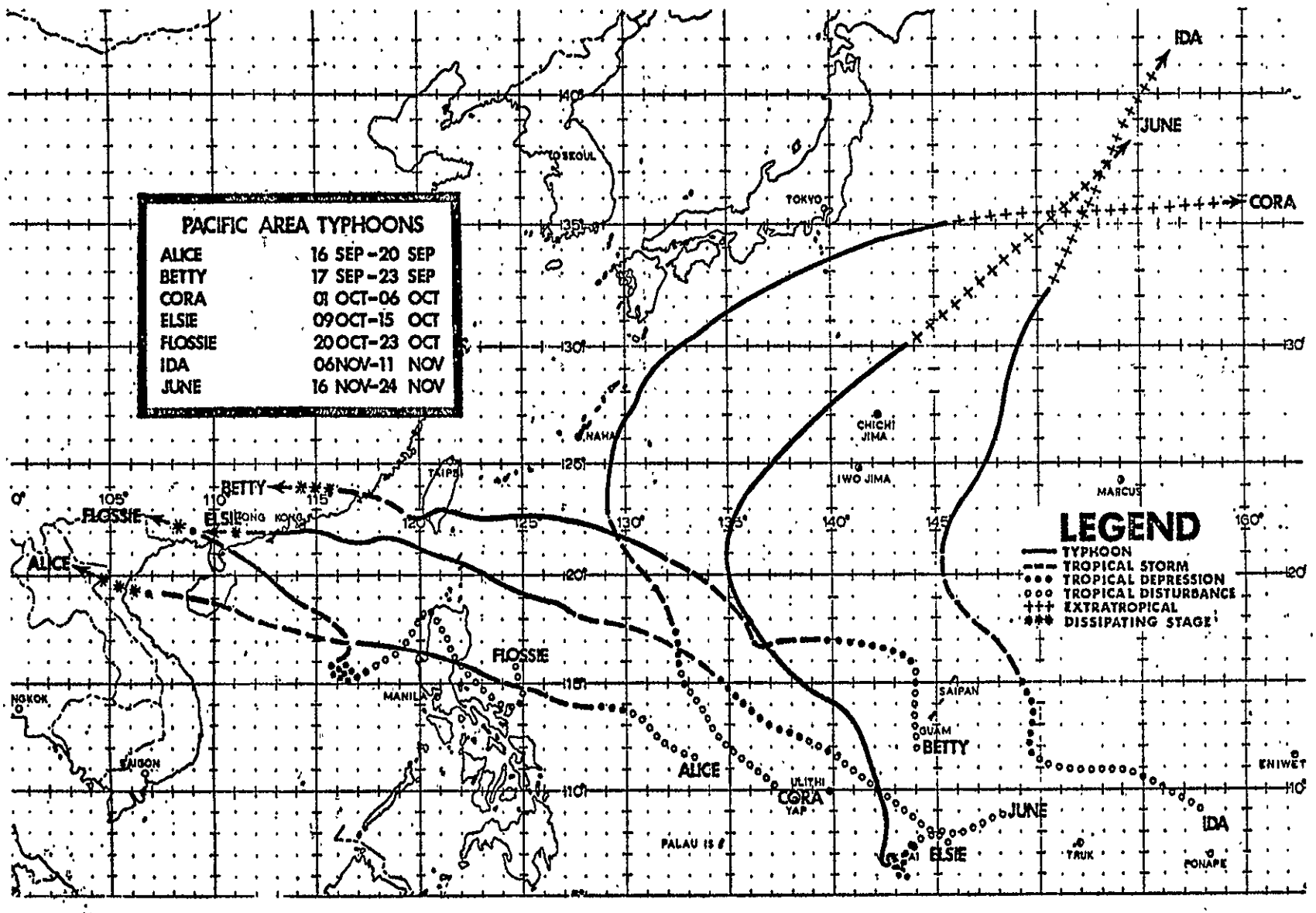
* LEGEND:

TY = Typhoon
TD = Tropical Depression
TS = Tropical Storm




PACIFIC AREA TYPHOONS
LOLA 22 JAN – 28 JAN
NINA 31 JUL – 04 AUG
ORA 10 AUG – 12 AUG
PHYLLIS 12 AUG – 18 AUG
RITA 18 AUG – 23 AUG
TESS 02 SEP – 10 SEP
WINNIE 09 SEP – 12 SEP
LEGEND
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
TOKYO
SEOUL
SHANGHAI
MANILA
SAIPAN
GUAM
YAP
WAKE
MARCUS
CHICHI JIMA
IWO JIMA
PONAPE
TRUK
KUSAIE
KWAJALEIN
WOLEAI
PALAU IS
SINGAPORE
TARAWA


PACIFIC AREA
TROPICAL STORMS & DEPRESSIONS
TD-02 23 APR - 29 APR
MAMIE 27 JUL - 29 JUL
TD-05 06 AUG - 07 AUG
SUSAN 26 AUG - 27 AUG
29 AUG - 01 SEP
VIOLA 05 SEP - 07 SEP
DORIS 03 OCT - 06 OCT
LEGEND
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
TS SUSAN #09
TS MAMIE #03
TS VIOLA #11
TS DORIS #16
TD-02
TD-05
TOKYO
SEOUL
SHANGHAI
TAIPEI
HONG KONG
MANILA
SAIGON
BANGKOK
CHICHI JIMA
IWO JIMA
MARCUS
SAIPAN
GUAM
YAP
PALAU IS
WOLEAI
PONAPE
JALUIT

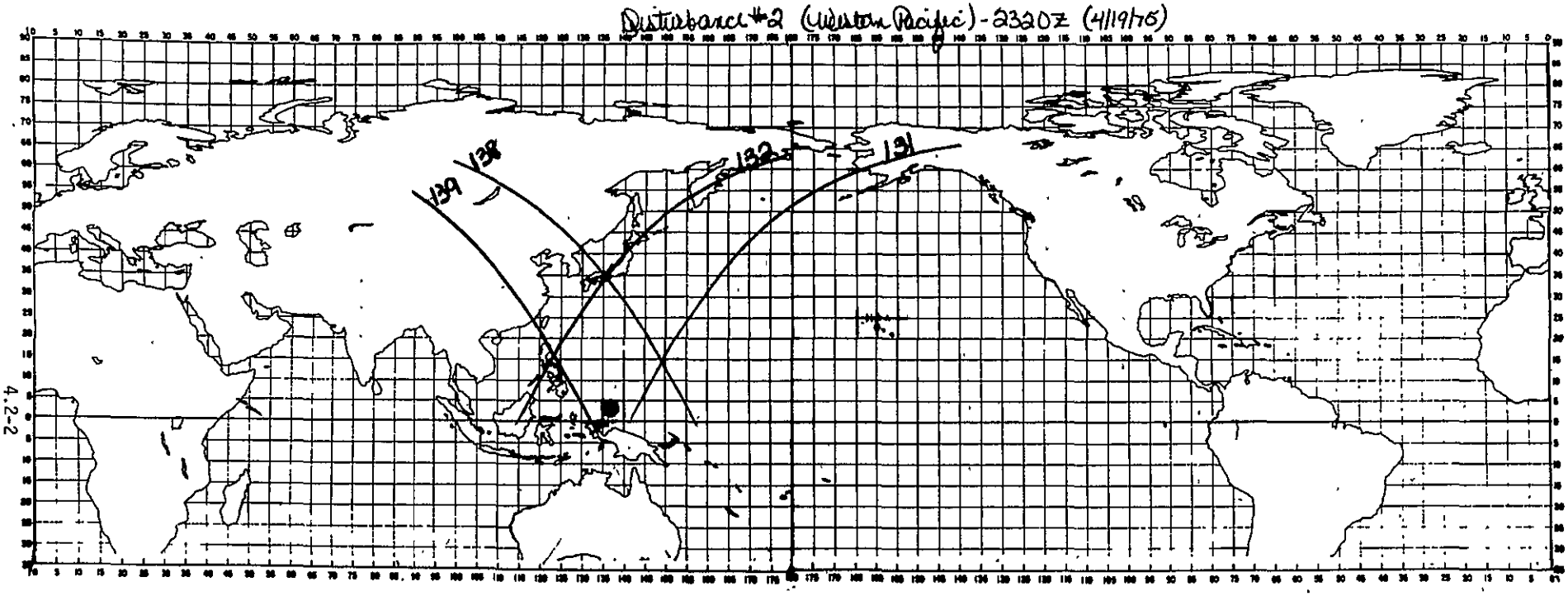

PACIFIC AREA TYPHOONS
ALICE 16 SEP-20 SEP
BETTY 17 SEP-23 SEP
CORA 01 OCT-06 OCT
ELSIE 09 OCT-15 OCT
FLOSSIE 20 OCT-23 OCT
IDA 06 NOV-11 NOV
JUNE 16 NOV-24 NOV
LEGEND
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
IDA
JUNE
CORA
SEOUL
TOKYO
NAHA
CHICHI JIMA
IWO JIMA
MARCUS
TAIPEI
HONG KONG
BETTY
FLOSSIE
ELSIE
ALICE
MANILA
SAIPAN
GUAM
BETTY
ULITHI
CORA
YAP
ALICE
FLOSSIE
PALAU IS
JUNE
IDA
ELSIE
TRUK
PONAPE
ENIWET
NOKOK
SAIGON
105°
110°
115°
120°
125°
130°
135°
140°
145°
160°
140°
130°
120°
110°

DISTURBANCE: TD#2 (WESTERN PACIFIC)

DATE: APRIL 19 - APRIL 28, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
4/19	2320Z	2.7N	136.0E			
4/20	1150Z	5.5N	131.0E			
4/21	0015Z	7.3N	127.3E			Tropical Disturbance
4/22	0100Z	9.2N	126.5E			
4/23	0008Z 1244Z	12.2N 10.5	122.8E 121.5			
4/24	0103Z 1142Z	12.0N 11.0	121.0E 120.5			Tropical Depression
4/25	0003Z 1237Z	11.5N 11.0	120.3E 119.3			
4/26	0057Z ?	11.3N 11.5	117.2E 115			
4/27	0153Z 1253Z	11.8N 12.0	113.9E 112.5			
4/28	0053Z	10.0N	112.0E			Below classification limits Dissipating Stage

NOTE: See track map, page 4.1-7



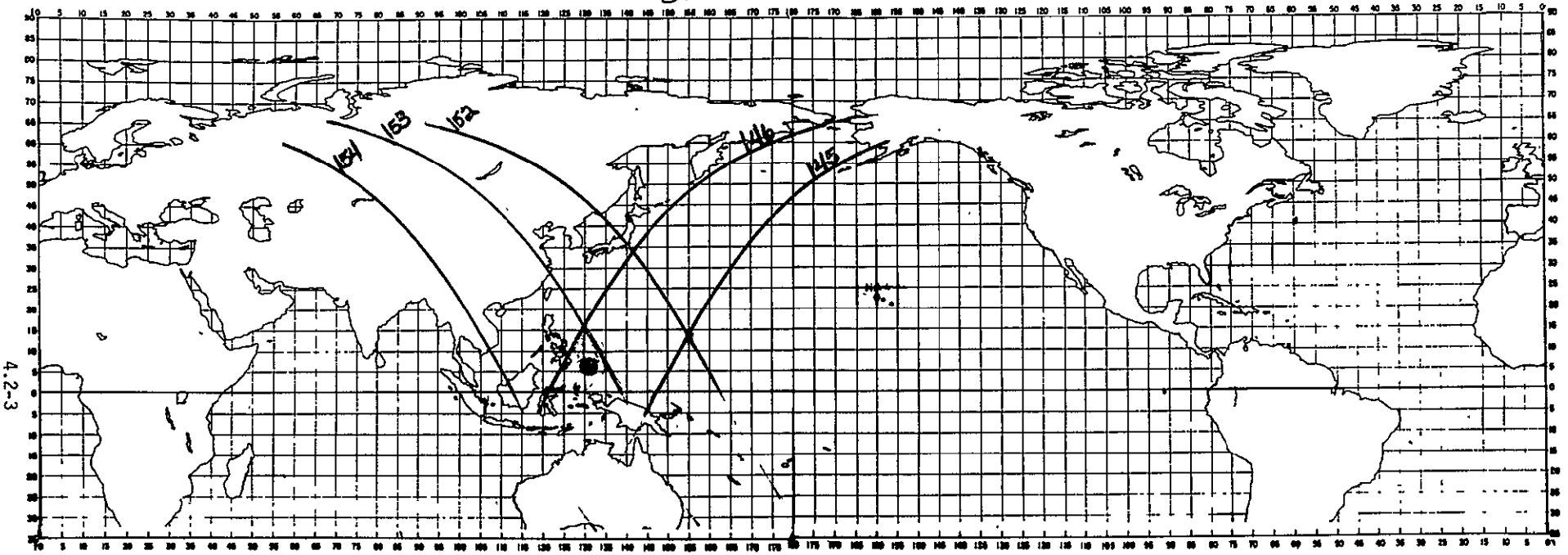
4.2-2

LOCATION

TIME	LATITUDE	LONGITUDE
2320Z	2.7N	136.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
131	-25.78	05 33 09 Z	06 23 09	Do			
132	-51.11	07 14 56 Z	08 01 56	Do			
138	156.95	17 25 39 Z	17 39 39	Do			
139	131.69	19 07 26 Z	19 08 26	Do			

Disturbance #2 (Western Pacific) - 1150 Z (4/20/75)



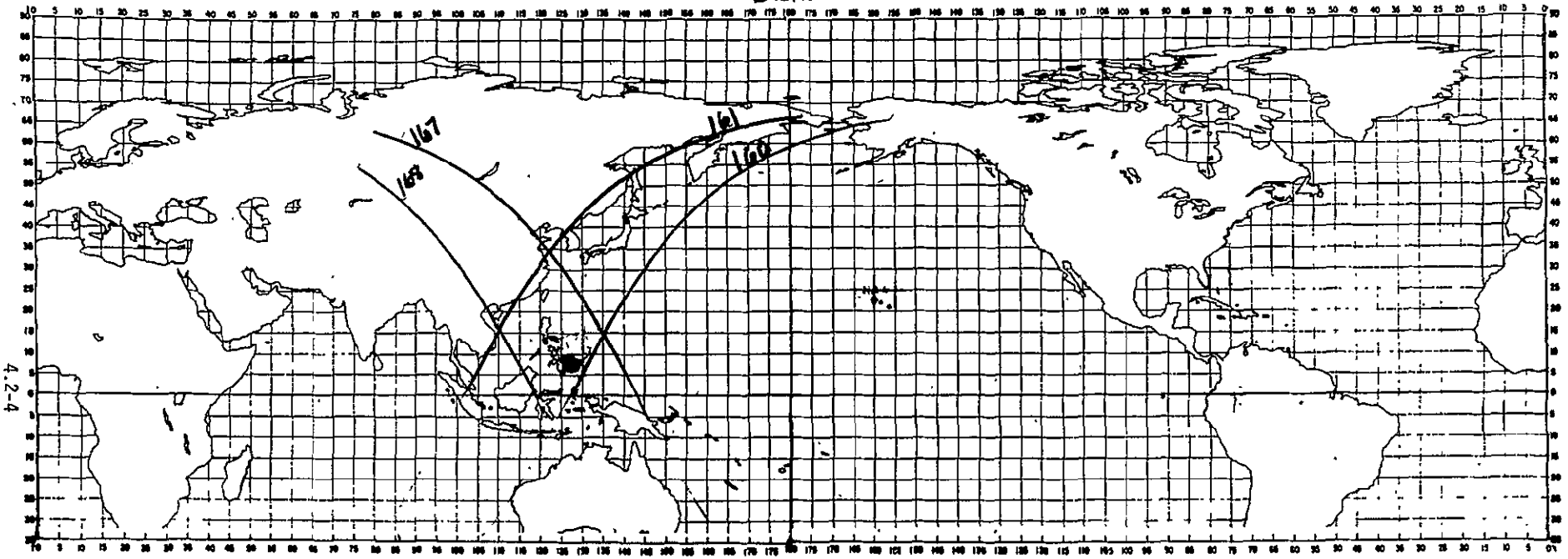
4.2-3

LOCATION

TIME	LATITUDE	LONGITUDE
1150Z	6.5N	131.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
145	-20.31	05 18 09 Z	06 09 Z	Do			
146	-45.64	06 59 56 Z	07 48 Z	Do			
152	162.48	17 10 39 Z	17 16 Z	Do			
153	137.10	18 52 26 Z	19 00 Z	Do			
154	111.78	20 34 13 Z	20 55 Z	Do			

Disturbance #2 (Western Pacific) - 0015 Z (4/21/75)



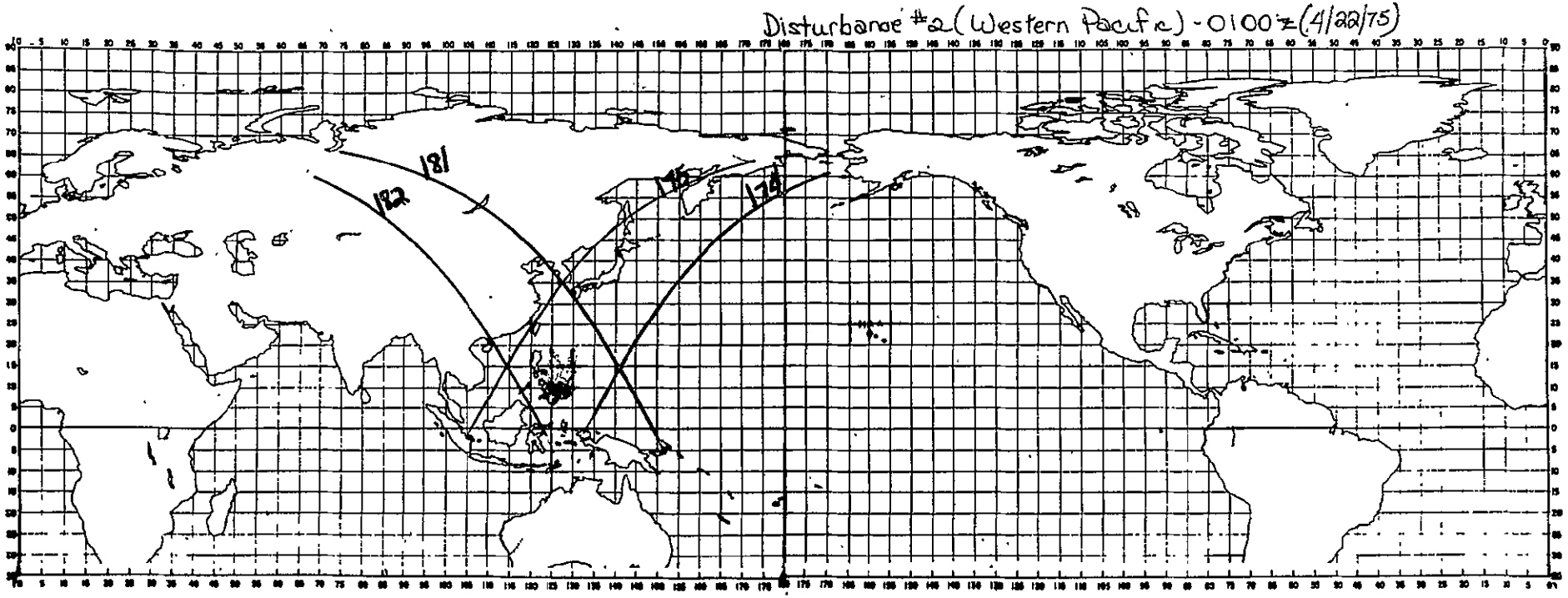
4.2-4

LOCATION

TROPICAL DISTURBANCE

TIME	LATITUDE	LONGITUDE
0015Z	7.3N	127.3E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
160	-40.16	06 44 56 Z	07 34 Z	Do			
161	-165.49	08 26 43 Z	09 14 Z	Do			
167	142.57	18 37 56 Z	18 43 Z	Do			
168	117.35	20 19 13 Z	20 27 Z	Do			

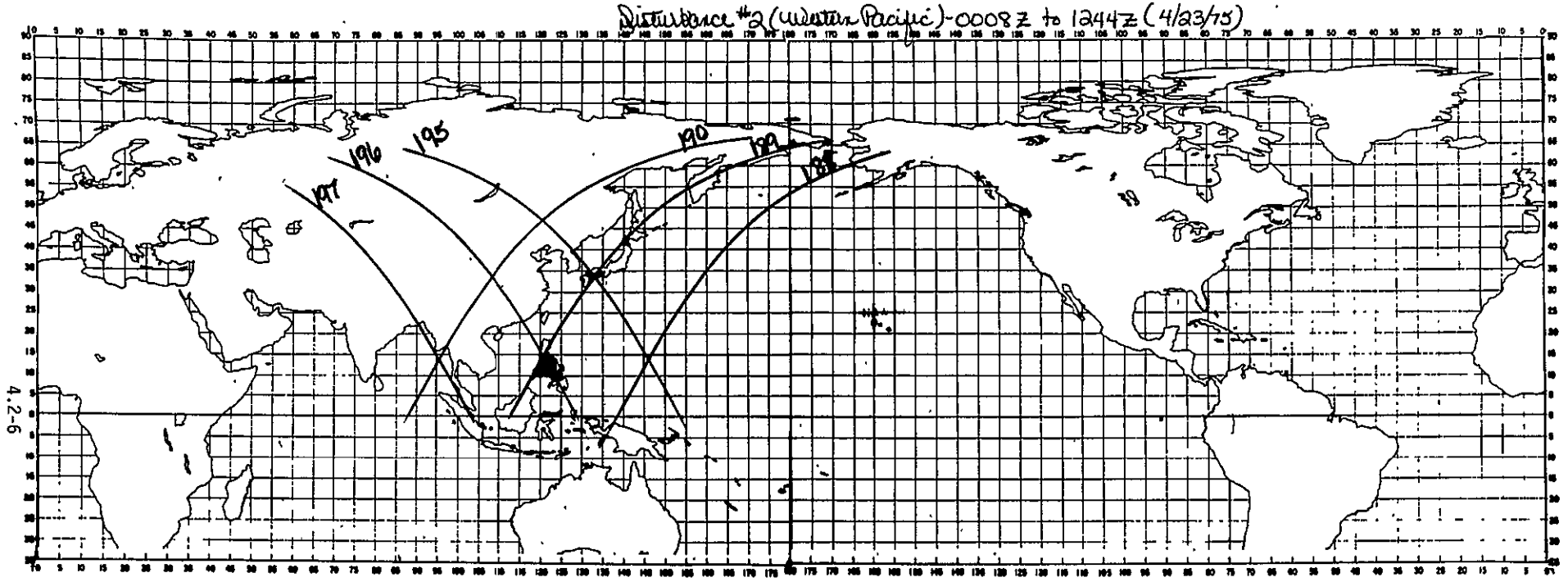


4.2-5

LOCATION

TIME	LATITUDE	LONGITUDE
0100Z	9.2N	126.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
174	-34.69	06 29 56 Z	07 19 Z	Do			
175	-60.02	08 11 43 Z	08 59 Z	Do			
181	148.04	18 22 26 Z	18 27 Z	Do			
182	122.72	20 04 13 Z	20 11 Z	Do			

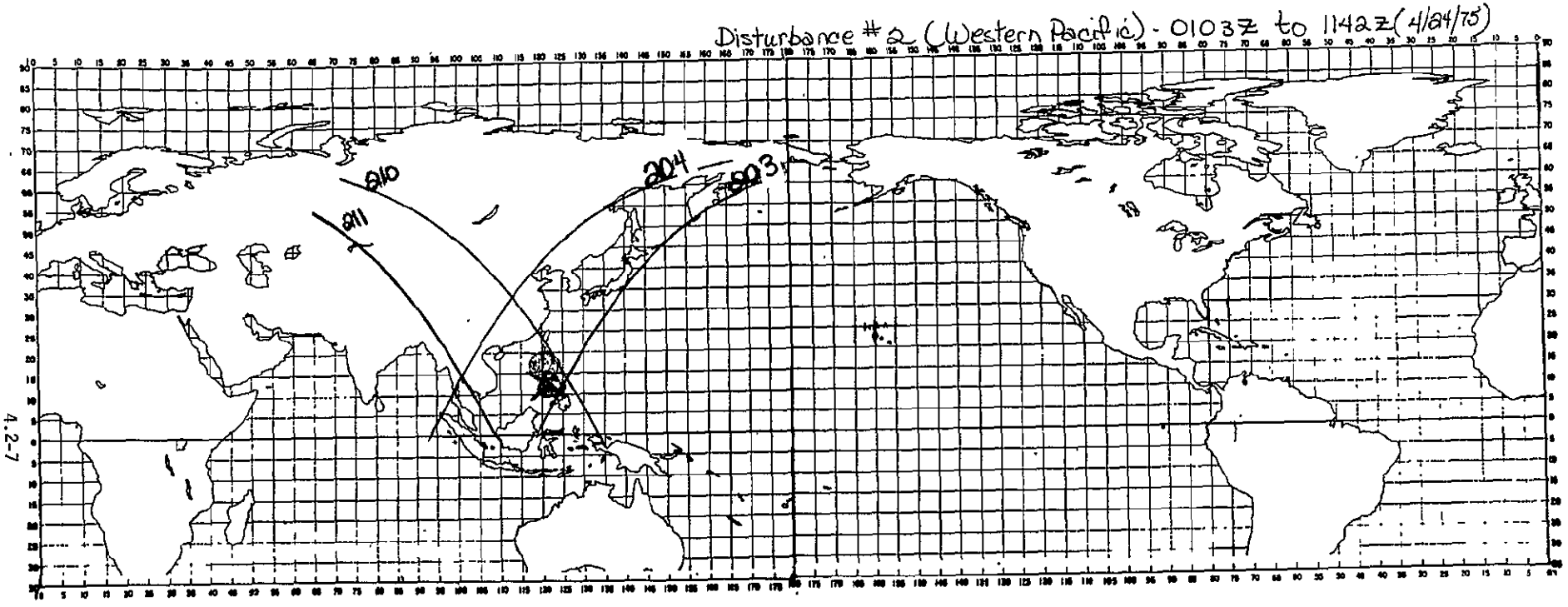


4.2-6

LOCATION

TIME	LATITUDE	LONGITUDE
0008Z	12.8N	122.8E
1244Z	10.5N	121.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
188	-29.20	06 14 58 Z	07 04 Z	No			
189	-54.54	07 56 43 Z	08 44 Z	No			
190	-79.87	09 38 30 Z	10 24 Z	No			
195	153.51	18 07 26 Z	18 12 Z	No			
196	128.19	19 49 13 Z	19 55 Z	No			
197	102.87	21 31 00 Z	21 38 Z	No			



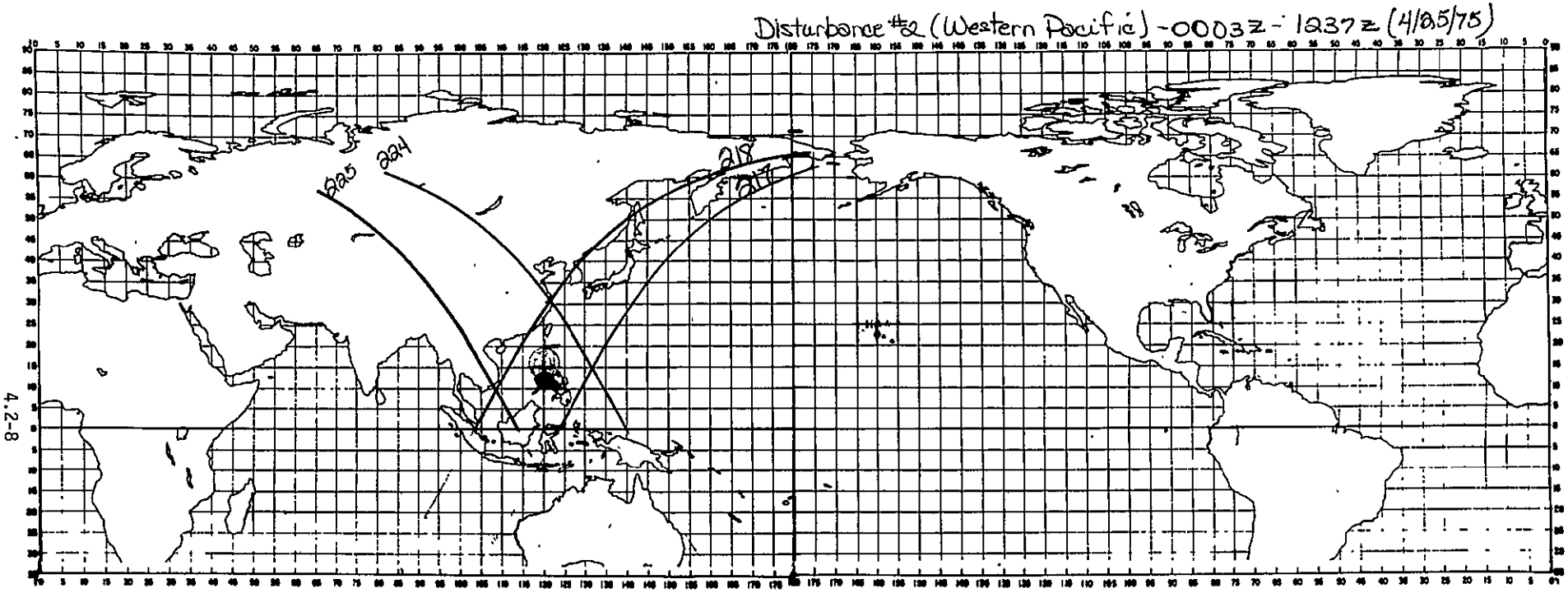
4.2-7

LOCATION

TROPICAL DEPRESSION

TIME	LATITUDE	LONGITUDE
0103Z	12.0N	121.0E
1142Z	11.0N	120.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
903	-49.07	07 41 43 Z	08 30 Z	Do			
804	-74.40	09 23 30 Z	10 09 Z	Do			
210	133.66	19 34 13 Z	19 38 Z	Do			
211	108.34	21 16 00 Z	21 18 Z	Do			

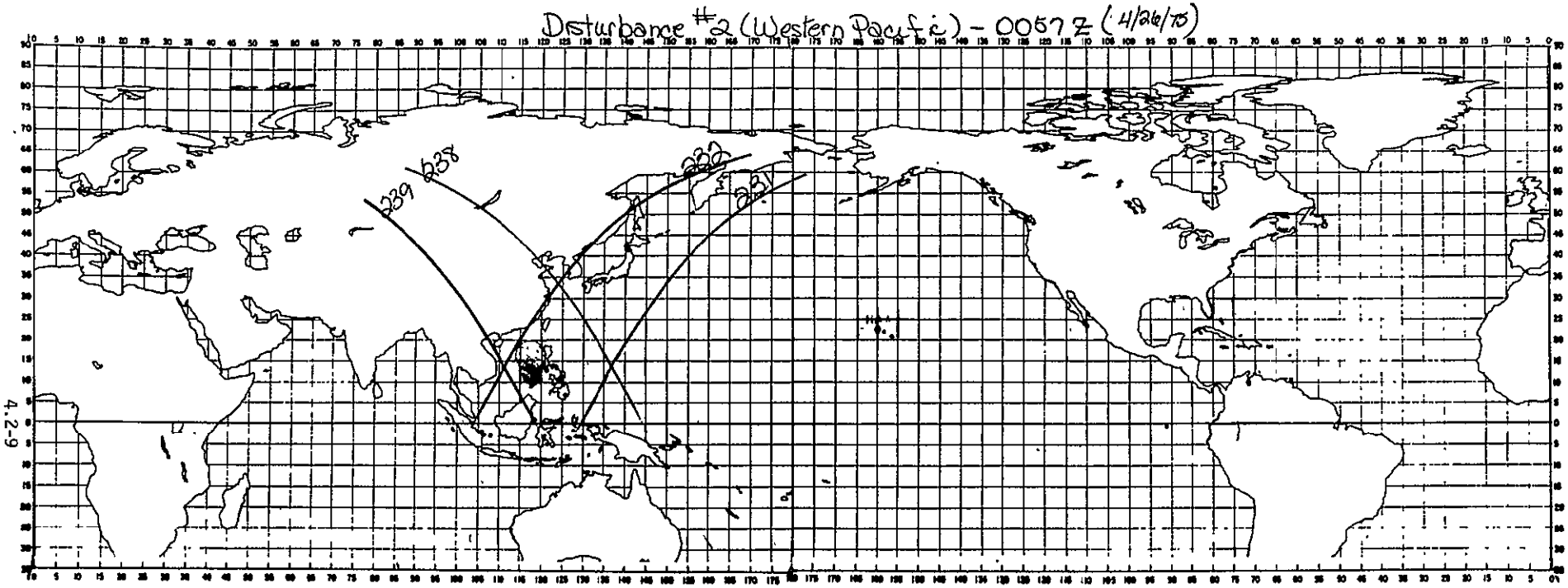


4.2-8

LOCATION

TIME	LATITUDE	LONGITUDE
0003Z	11.5N	120.3E
1237Z	11.0N	119.3E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
217	-48.60	07 26 43 Z	08 15 Z	Do			
218	-63.92	09 08 30 Z	09 54 Z	Do			
224	139.13	19 19 13 Z	19 25 Z	Do			
225	113.81	21 01 00 Z	21 03 Z	Do			



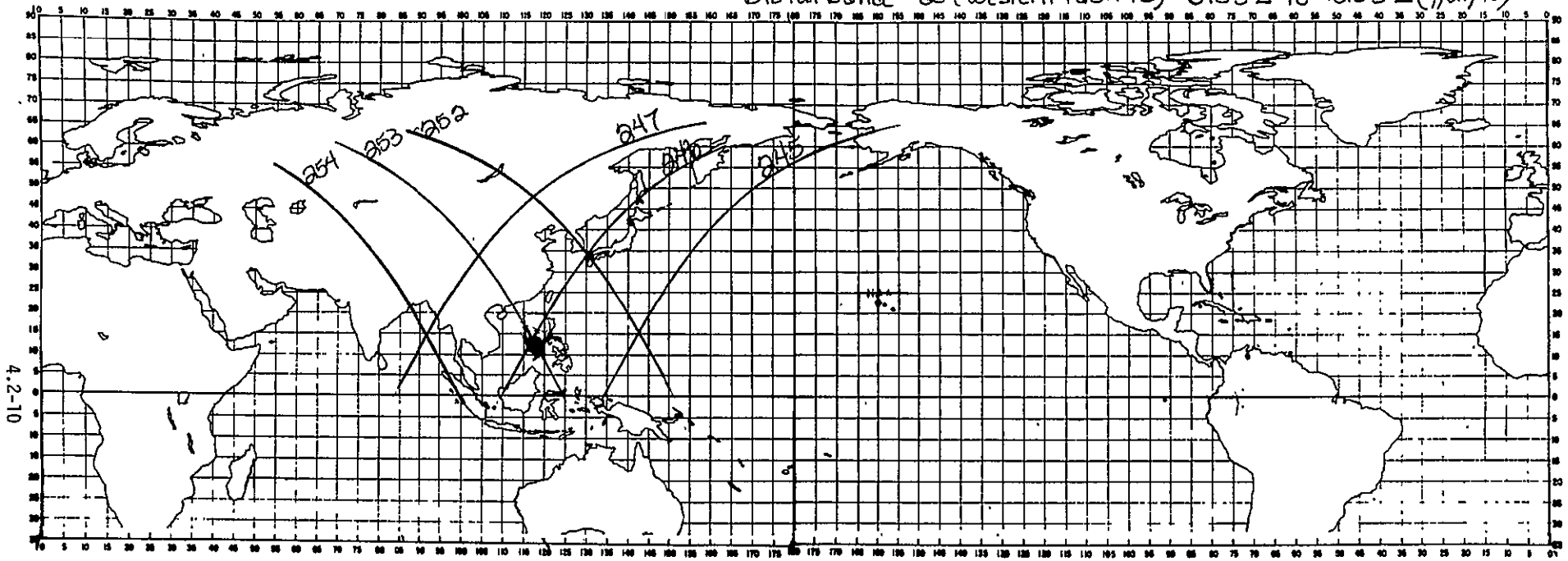
4.2-9

LOCATION

TIME	LATITUDE	LONGITUDE
0057Z	11.3N	117.2E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
231	-38.13	07 11 43 Z	08 01 Z	No			
232	-63.45	08 53 30 Z	09 39 Z	No			
238	144.61	19 04 12 Z	19 10 Z	No			
239	119.28	20 46 00 Z	20 49 Z	No			

Disturbance #2 (Western Pacific) - 0153Z to 1253Z (4/27/75)

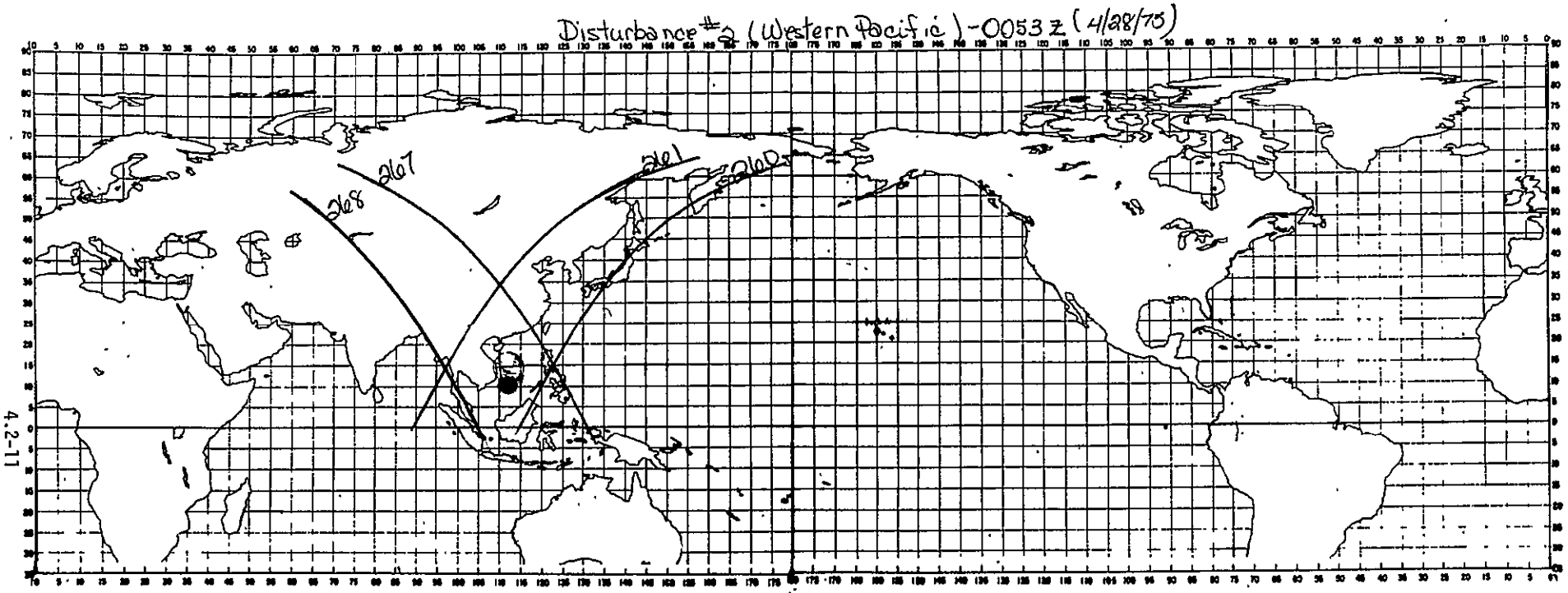


4.2-10

LOCATION

TIME	LATITUDE	LONGITUDE
0153Z	11.8 N	113.9E
1253Z	12 0 N	112.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
245	-32.105	06 56 42 Z	07 45 Z	No			
246	-57.98	08 38 30 Z	09 25 Z	No			
247	-83.80	10 20 17 Z	11 06 Z	No			
252	150.08	18 49 12 Z	18 55 Z	No			
253	124.76	20 30 59 Z	20 35 Z	No			
254	99.43	22 12 47 Z	22 15 Z	No			



4.2-11

LOCATION

TIME	LATITUDE	LONGITUDE
0053Z	10.0N	112.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
267	130.23	20 15 59 Z	20 21 Z	Do			
268	104.91	21 57 46 Z	22 00 Z	Do			
260	-52.51	08 23 29 Z	09 11 Z	Do			
261	-77.83	10 05 16 Z	10 50 Z	Do			

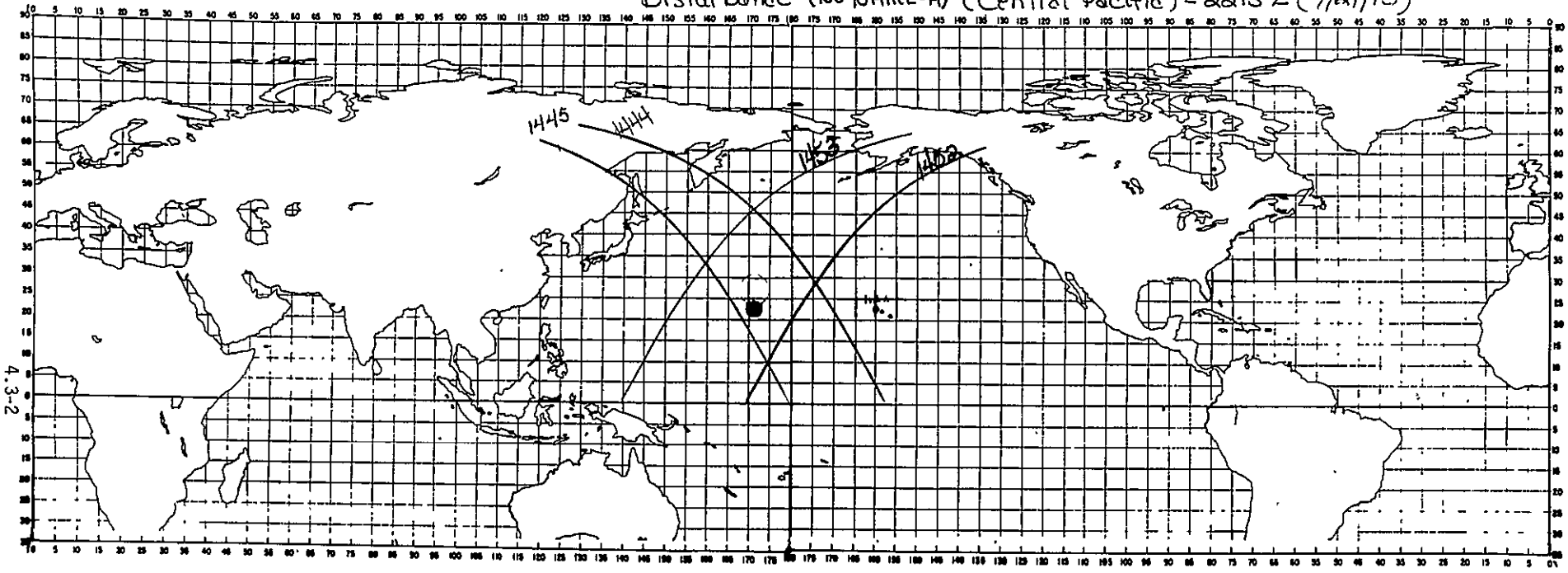
DISTURBANCE: NO NAME-A* (CENTRAL PACIFIC)

DATE: JULY 21 - JULY 25, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
7/21	2215Z	23.0N	171.0E			
7/22	0904Z 2114Z	24.2N 27.0	169.2E 169.0			
7/23	0323Z 2210Z	29.0N 27.3	166.9E 163.2			
7/24	2304Z	31.8N	162.0E			
7/25	0958Z	34.0N	164.0E			

*Not carried by Guam

Disturbance (NO NAME-A) (Central Pacific) - 2215 Z (7/21/75)



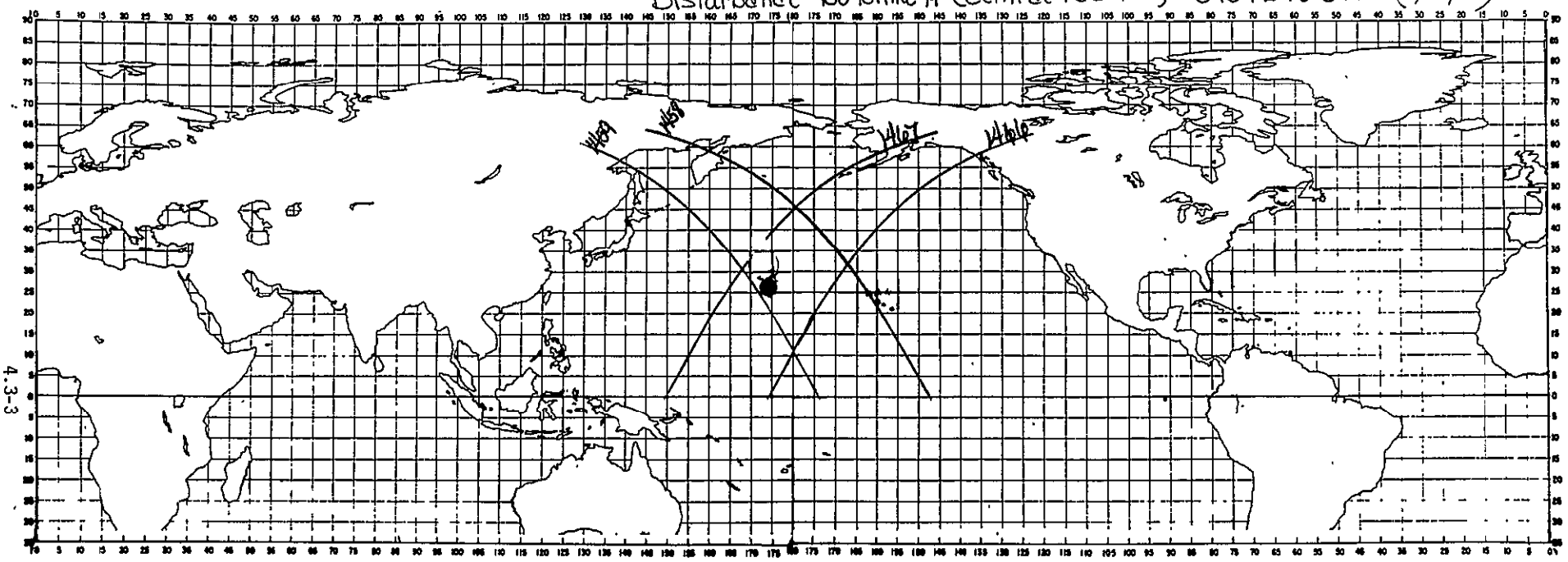
4.3-2

LOCATION

TIME	LATITUDE	LONGITUDE
2215 Z	23.0 N	171 0 E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1444	-158.27	00 56 57 Z	01 07 Z	Do			
1445	179.40	02 38 44 Z	03 46 Z	Do			
1452	2.14	14 31 14 Z	15 16 Z	Do			
1453	-23.18	16 13 01 Z	16 55 Z	Do			

Disturbance NO NAME-A (Central Pacific) - 0904Z to 2114Z (7/22/75)

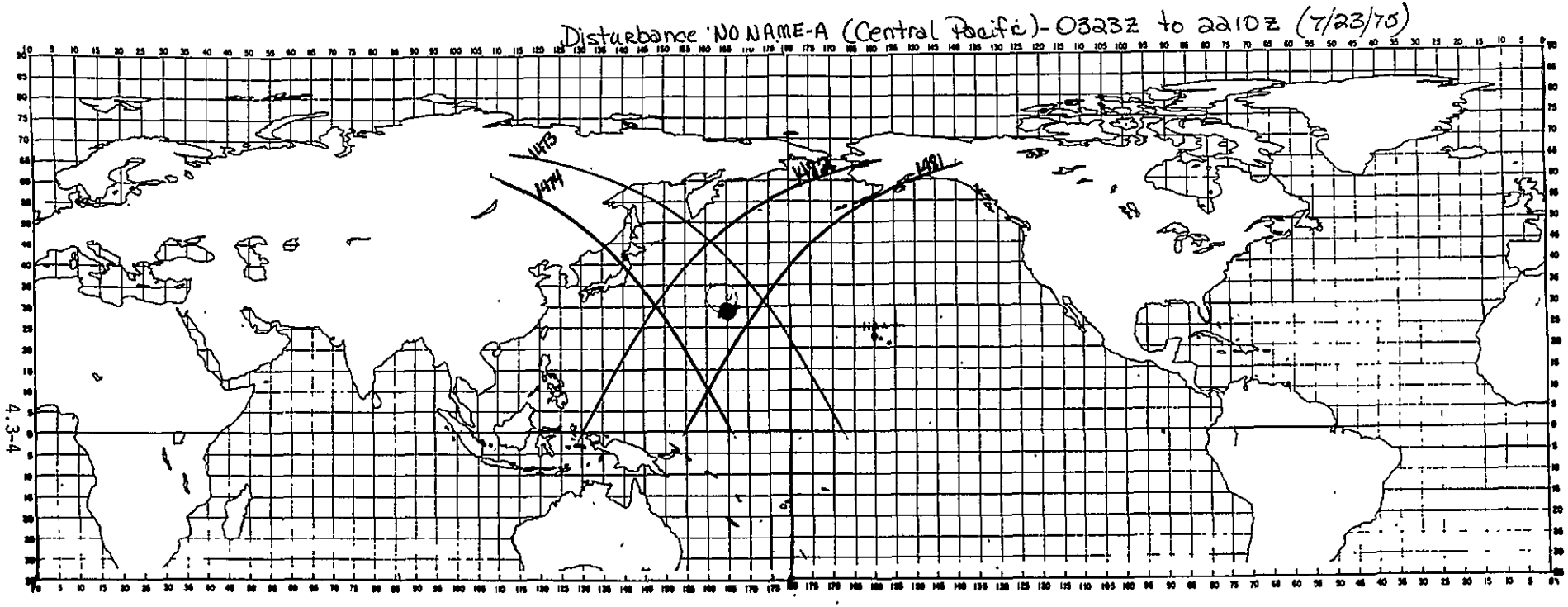


4.3-3

LOCATION

TIME	LATITUDE	LONGITUDE
0904Z	24.2N	169.2E
2114Z	27.0N	169.0E

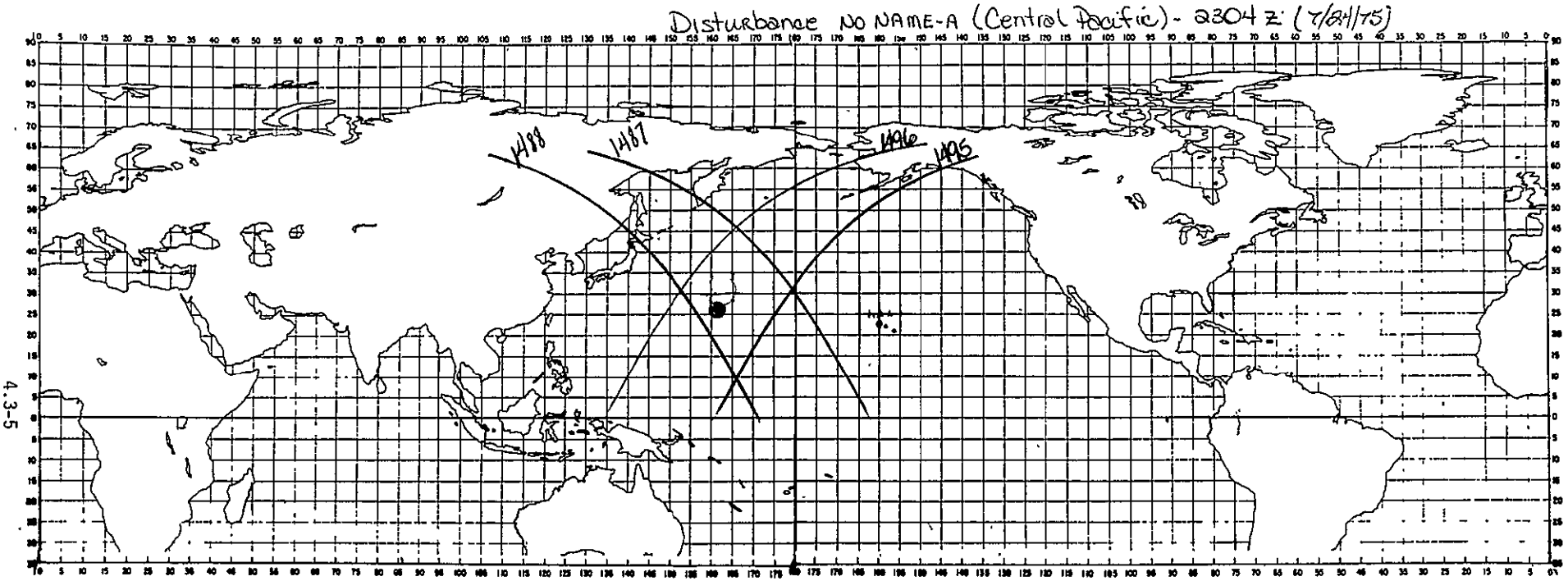
ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1458	-149.80	00 41 57 Z	00 54 Z	No			
1459	-175.12	02 23 44 Z	02 32 Z	No			
1466	7.161	14 16 14 Z	15 00 Z	No			
1467	-17.71	15 59 01 Z	16 41 Z	No			



LOCATION

TIME	LATITUDE	LONGITUDE
0323Z	29 0N	166.9E
2210Z	27.3N	163.2E

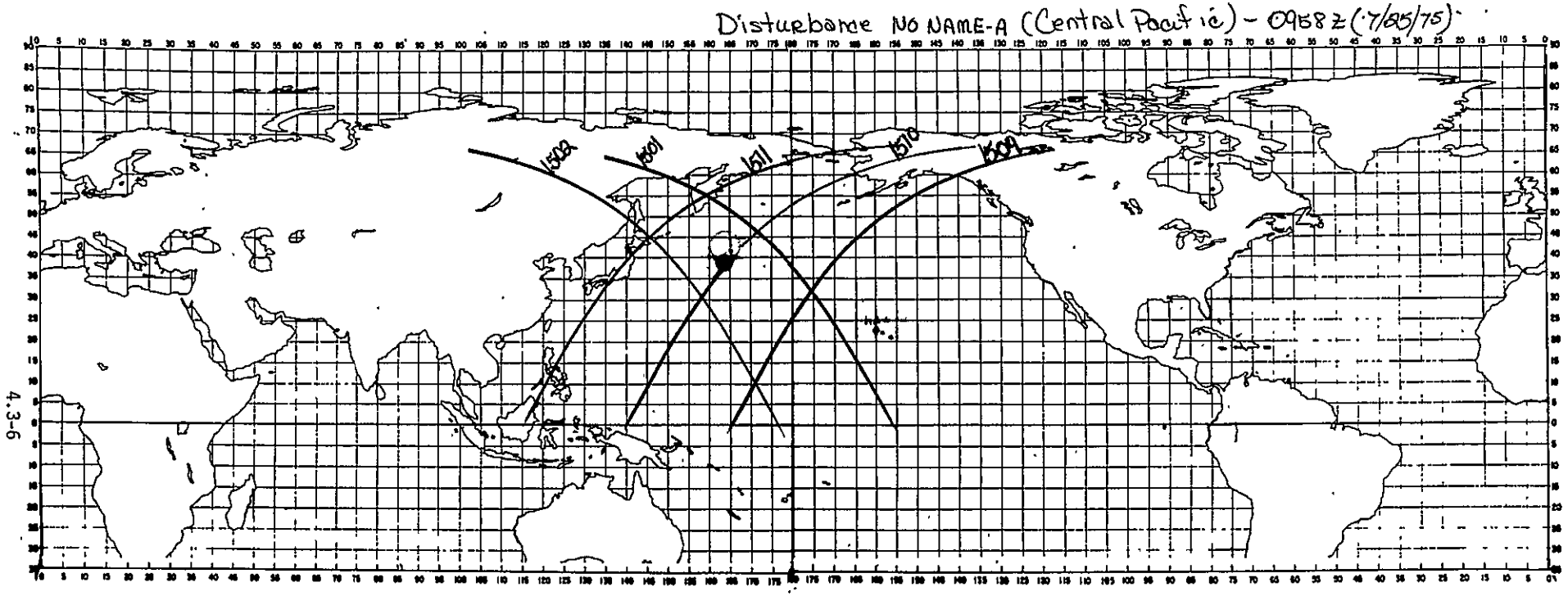
ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1473	-169.85	02 09 43 Z	02 20 Z	No			
1474	165.03	03 50 30 Z	03 58 Z	No			
1481	-12.83	15 43 00 Z	16 23 Z	No			
1482	-37.56	17 24 47 Z	18 10 Z	No			



LOCATION

TIME	LATITUDE	LONGITUDE
2304Z	31.8N	162.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1487	-164.18	01 53 43 Z	02 05 Z	Do			
1488	170.50	03 35 30 Z	03 43 Z	Do			
1495	-6.76	15 27 59 Z	16 14 Z	162028	163623	302	399
1496	-32.03	17 09 46 Z	17 51 Z	Do			



4.3-6

LOCATION

TIME	LATITUDE	LONGITUDE
0958Z	34.0N	164.0E

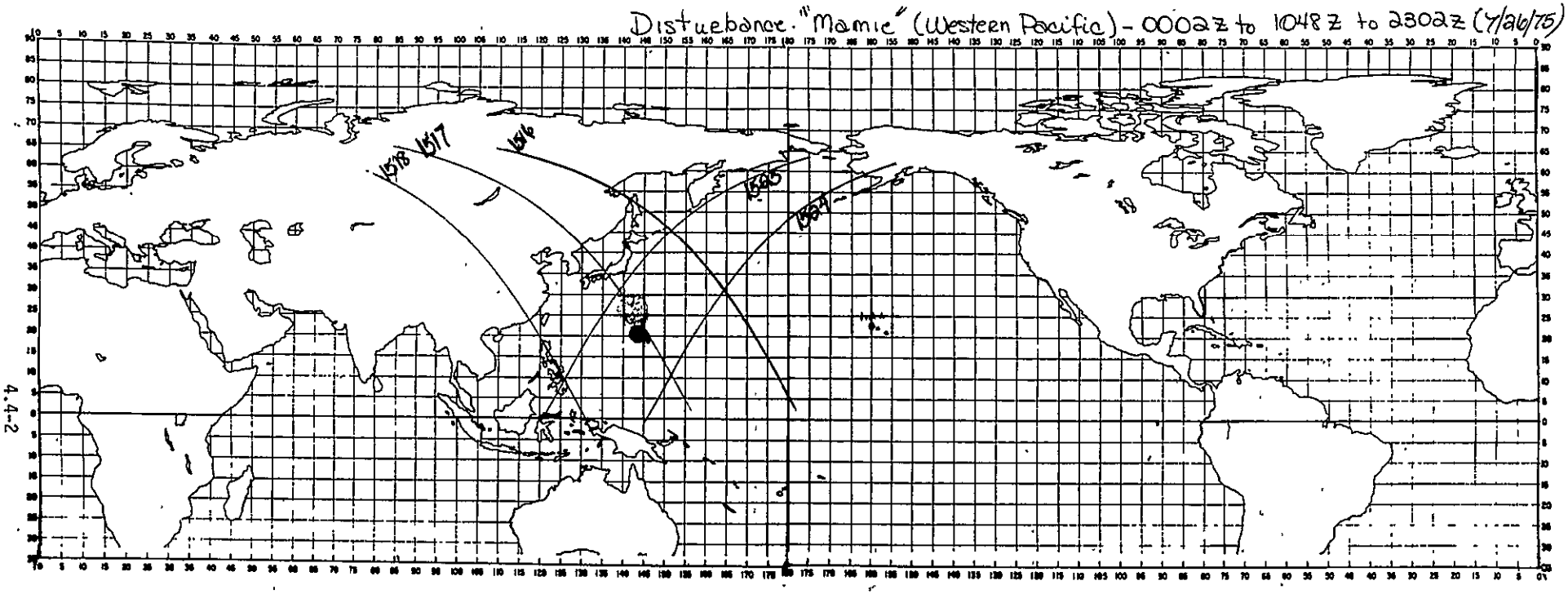
ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1501	-158.70	01 38 42 Z	01 54 Z	Do			
1502	175.97	03 20 29 Z	03 31 Z	Do			
1509	-1.29	15 12 59 Z	15 55 Z	Do			
1510	-26.61	16 54 46 Z	17 34 Z	Do			
1511	-51.94	18 36 33 Z	19 15 Z	Do			

DISTURBANCE: "MAMIE" (WESTERN PACIFIC)

DATE: JULY 26 - JULY 30, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
7/26	0002Z 1048Z 2302Z	19.0N 20.7 21.5	145.35E 144.0 143.0			
7/27	1438Z 2356Z	23.2N 23.5	139.0E 139.6			
7/28	1045Z 2255Z	24.5N 26.0	137.5E 135.5			
7/29	1140Z 2349Z	26.0N 31.0	131.5E 130.0			
7/30	1041Z	33.0N	129.0E			

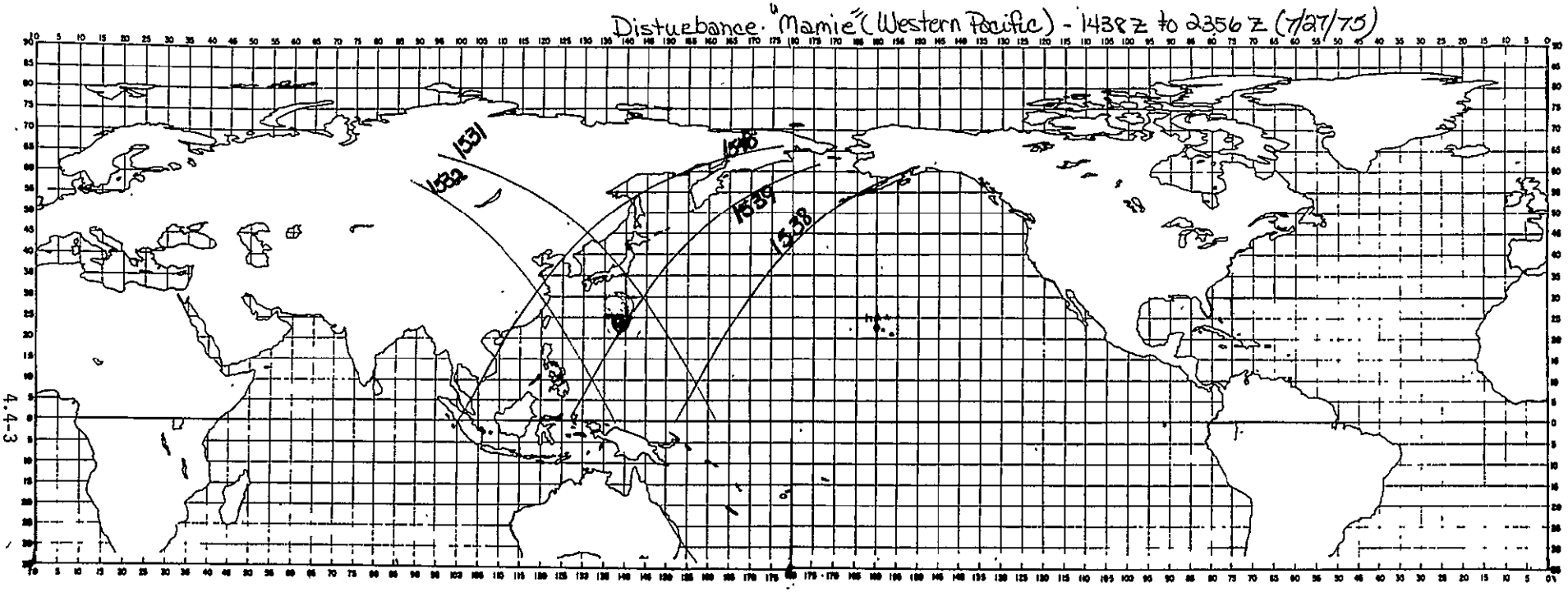
NOTE: See track map, page 4.1-7.



LOCATION

TIME	LATITUDE	LONGITUDE
0002z	19.0N	145.35E
1048z	20.7N	144.0E
2302z	21.5N	143.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1516	-178.55	03 05 49 z	03 15 z	Do			
1517	156.13	04 47 15 z	04 53 z	Do			
1518	130.80	06 29 02 z	06 33 z	Do			
1584	-21.14	16 39 24 z	17 25 z	Do			
1585	-46.46	18 21 32 z	19 06 z	Do			

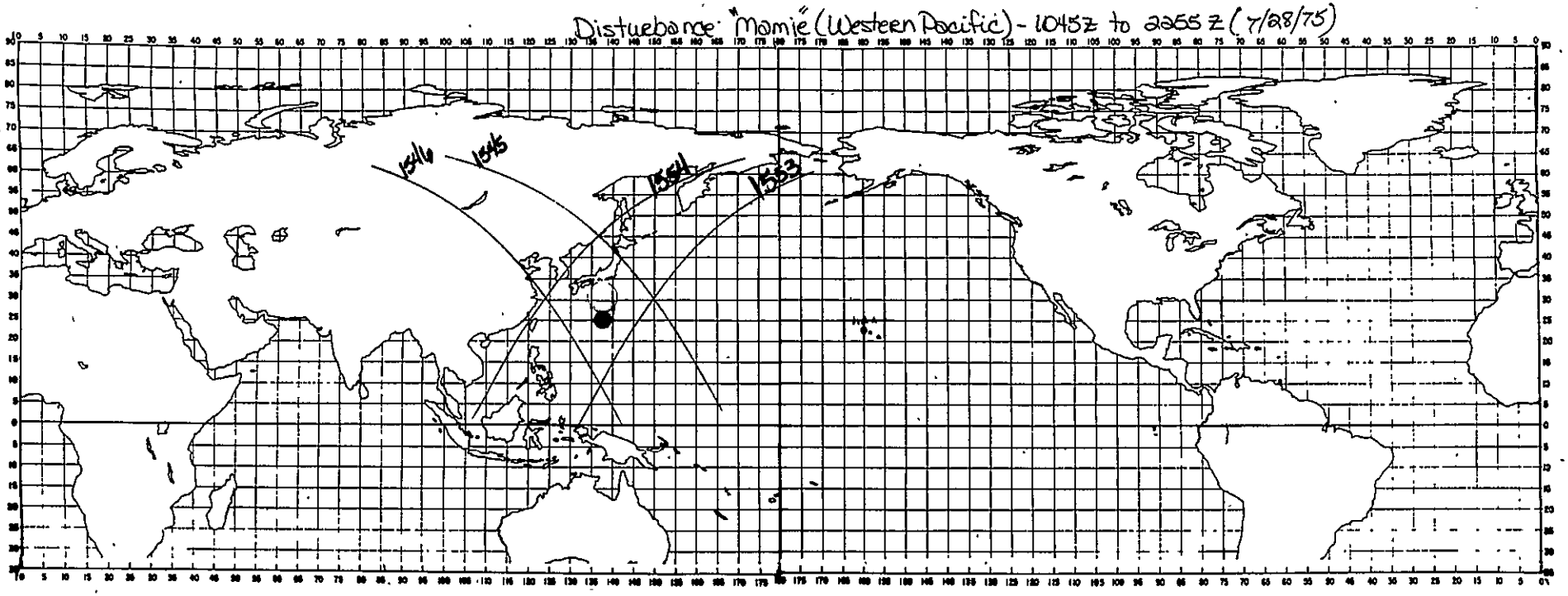


4.4-3

LOCATION

TIME	LATITUDE	LONGITUDE
1438Z	23.2N	139.0E
2356Z	23.5N	139.6E

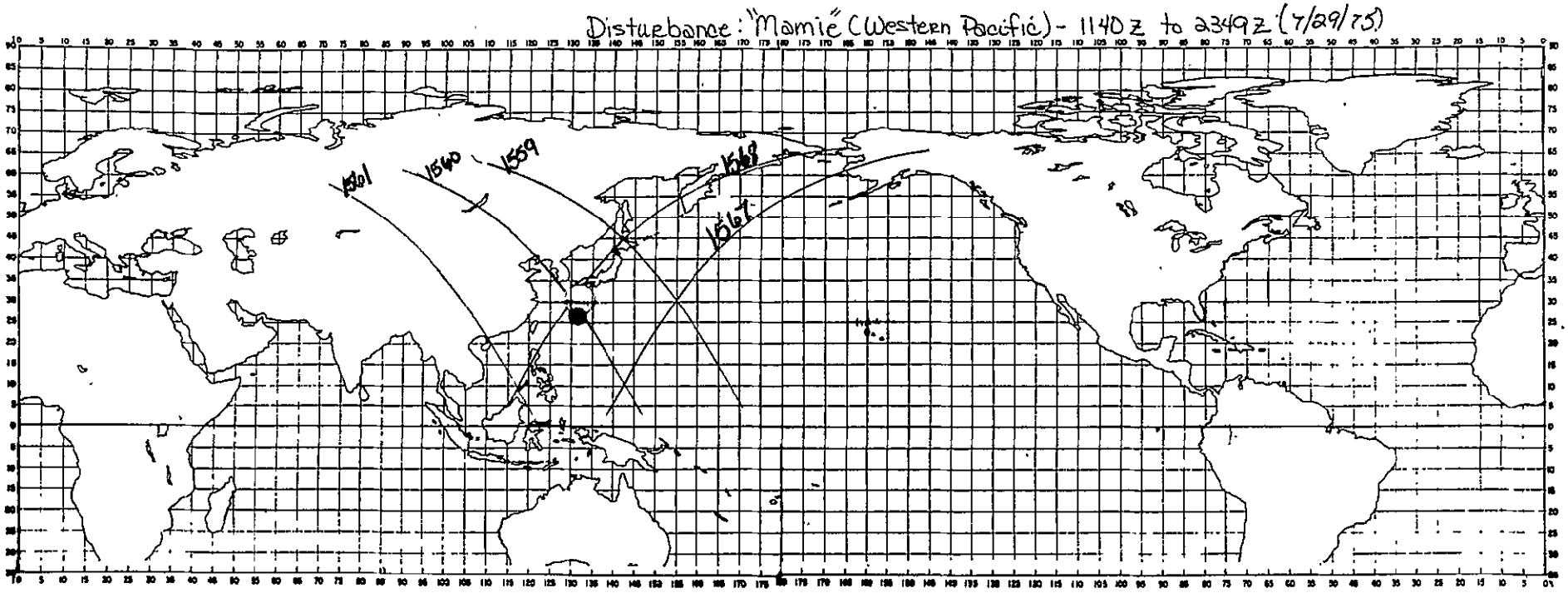
ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1531	161.60	04 32 15 Z	04 41 Z	No			
1532	136.28	06 14 02 Z	06 20 Z	No			
1538	-15.67	16 24 45 Z	17 12 Z	No			
1539	-40.99	18 06 32 Z	18 51 Z	No			
1540	-66.31	19 48 19 Z	20 29 Z	No			



LOCATION

TIME	LATITUDE	LONGITUDE
1045Z	24.5N	137.5E
2255Z	26.0N	135.5E

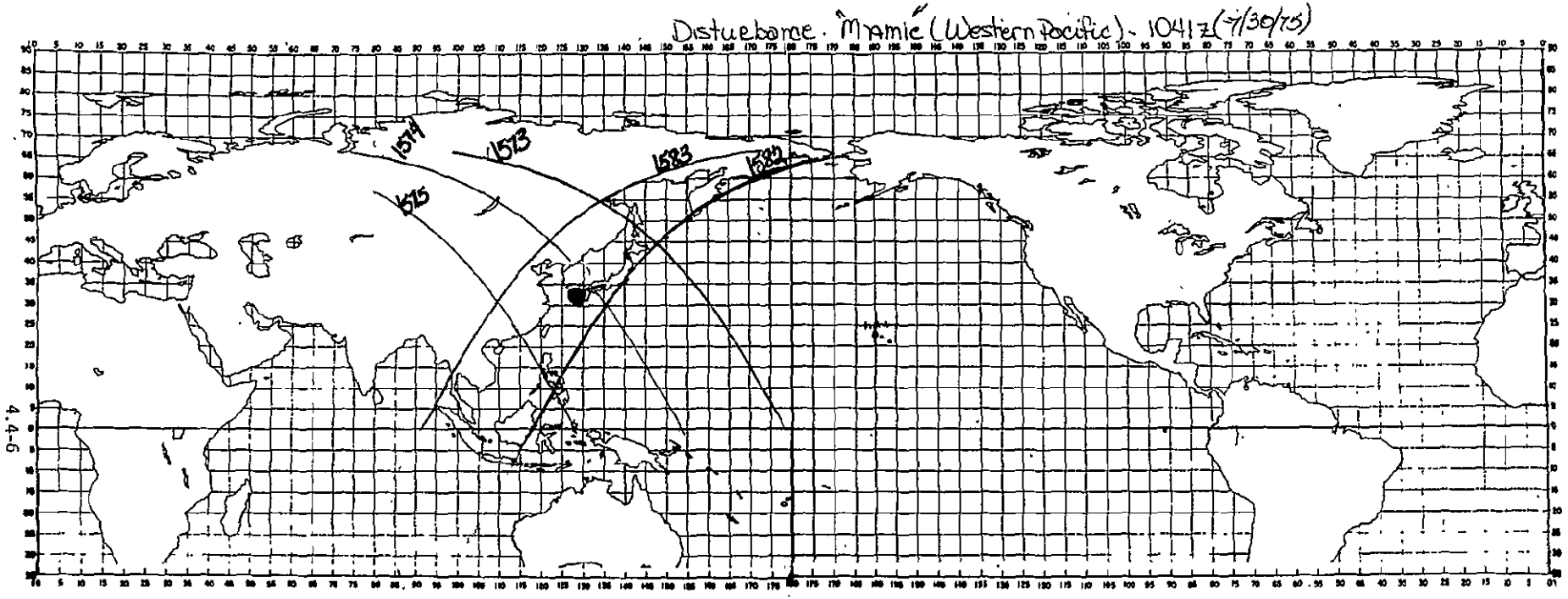
ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1545	167.07	04 17 14 Z	04 27 Z	No			
1546	141.75	05 59 01 Z	06 06 Z	No			
1553	-35.51	17 51 31 Z	18 36 Z	No			
1554	-60.84	19 33 15 Z	20 14 Z	No			



LOCATION

TIME	LATITUDE	LONGITUDE
1140Z	26.0N	131.5E
2349Z	31.0N	130.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1559	172.54	04 02 14 Z	04 15 Z	Do			
1560	147.22	05 44 01 Z	05 57 Z	Do			
1561	121.90	07 25 48 Z	07 32 Z	Do			
1567	-30.04	17 36 30 Z	18 21 Z	Do			
1568	-55.36	19 18 17 Z	20 00 Z	195749	200531	802	453



LOCATION

TIME	LATITUDE	LONGITUDE
1041Z	33.0N	129.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1573	178.02	03 47 13 Z	04 02 Z	No			
1574	152.70	05 29 00 Z	05 40 Z	No			
1575	127.37	07 10 47 Z	07 19 Z	No			
1582	-49.39	19 03 17 Z	19 45 Z	191330	195240	803	469
1583	-76.21	20 46 04 Z	21 23 Z	No			

TYPHOON NINA

(July 31 - August 4, 1975)

Meteorological History/Data

As Tropical Storm Mamie dissipated and drifted toward Korea, the monsoon trough migrated northward leaving a well-defined trough line extending southeastward from the remains of Mamie into the Philippine Sea. A tropical disturbance spawned in this trough near 20N 137E on 29 July and rapidly developed into Typhoon Nina, one of the most destructive storms of the 1975 season.

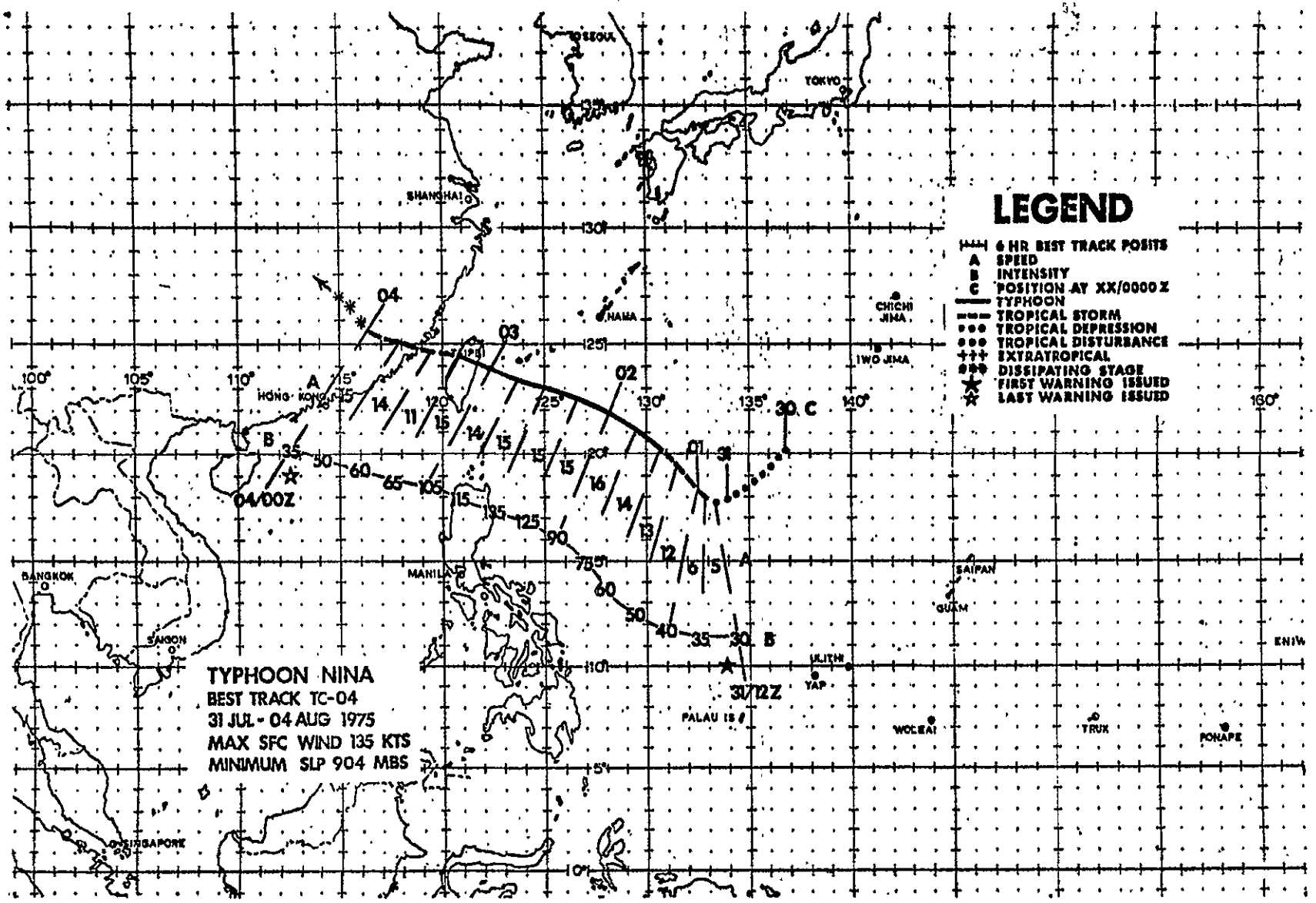
After initial detection by satellite and classification as a tropical disturbance, TD-04 moved southwestward for approximately 36 hours as surface and upper-air circulations became organized and vertically aligned. By 1200Z on the 31st the system slowed, intensified rapidly to tropical storm strength, and began turning to the northwest. As the storm made this turn, it responded to midtropospheric steering flow and accelerated along the equatorward periphery of the 500 mb subtropical ridge. Continued building of the subtropical ridge to the west forced Nina to take a west-northwesterly track toward Taiwan just prior to reaching typhoon intensity on 1 August.

Nina underwent explosive deepening late on 1 August. Aircraft reconnaissance data indicated a 63 mb drop in sea level pressure at the typhoon center between August 1 at 1437Z and August 2 at 0830Z, with maximum surface winds increasing from 65 knots to 130 knots during that period. A peak intensity of 135 knots was attained on the 2nd at 1200Z, approximately 200nm east of Taiwan. The typhoon slowly decreased in intensity while approaching the island, making landfall near the coastal city of Hualien on the 3rd at 0300Z with maximum surface winds of 100 kt.

Nina entered the Formosa Straits with minimal typhoon strength, and weakened to approximately 60 knots before striking the China mainland on the 3rd at 1500Z. Nina moved inland and lost tropical cyclone characteristics on the 4th of August.

Damage/Deaths

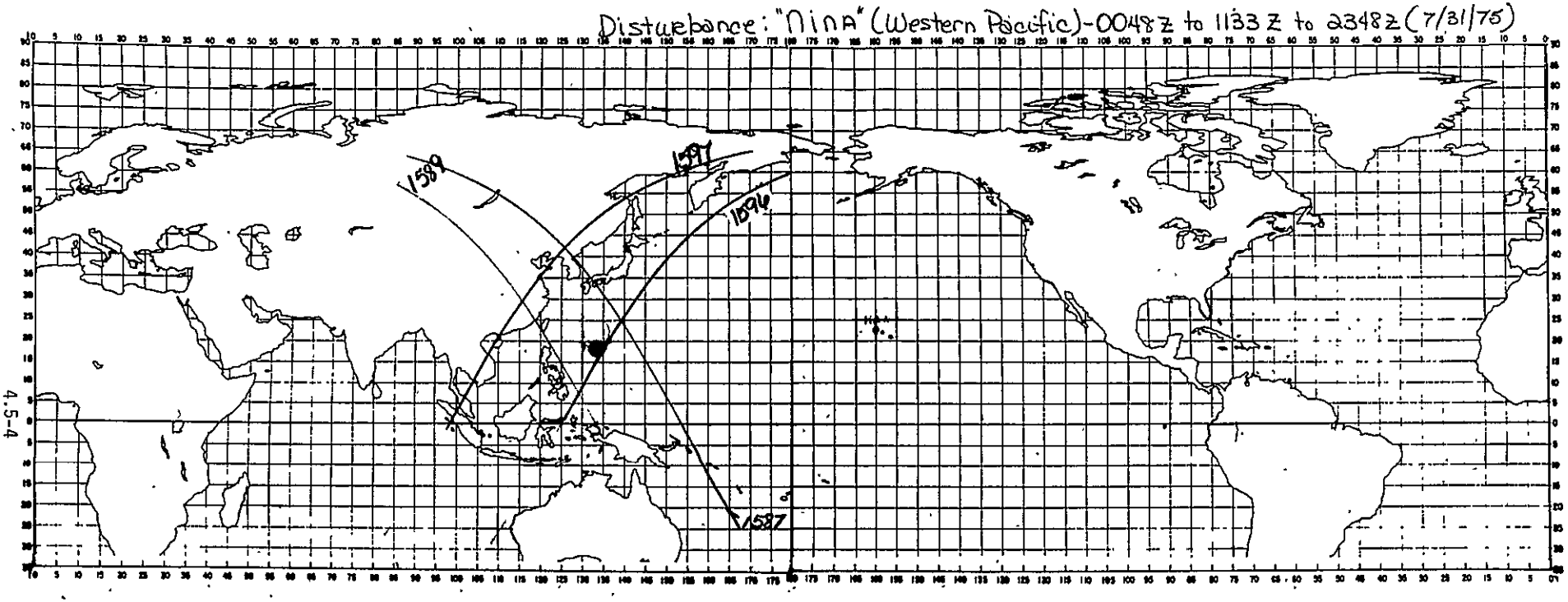
Much of the typhoon's strength was lost as it battered across Taiwan's central mountain range, fortunately sparing the most populous areas from the more intensive winds near the eye. Nevertheless, Nina's trek across Taiwain reportedly left 25 people dead, 4 missing and 168 injured. It was also reported that over 3,000 homes were at least partially collapsed, 39 fishing boats were sunk, and a 16,000 ton Korean freighter, THE SUN STAR, was capsized near Koahsiung harbor. Damage from flooding and landslides was widespread.


LEGEND
6 HR BEST TRACK POSITS
A SPEED
B INTENSITY
C POSITION AT XX/0000 Z
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
TYPHOON NINA
BEST TRACK TC-04
31 JUL - 04 AUG 1975
MAX SFC WIND 135 KTS
MINIMUM SLP 904 MBS
04/00Z
31/12Z
SEOUL
TOKYO
SHANGHAI
NAHA
CHICHI JIMA
IWO JIMA
HONG KONG
BANGKOK
SAIGON
MANILA
SAIPAN
GUAM
YAP
ULITHI
WOLEAI
TRUK
PONAPE
PALAU IS
SINGAPORE

DISTURBANCE: "NINA" (WESTERN PACIFIC)

DATE: JULY 31 - AUGUST 3, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
7/31	0048Z 1133Z 2348Z	17.2N 17.5 17.1	134.2E 132.7 132.0			Tropical Depression Tropical Storm
8/1	1228Z	20.0N	130.5E			Typhoon
8/2	0042Z 1130Z	21.8N 23.2	127.1E 125.1			
8/3	0136Z	23.4N (Within 1° Taiwan)	122.2E			
	1225Z	24.5 (Over Land)	118.0			

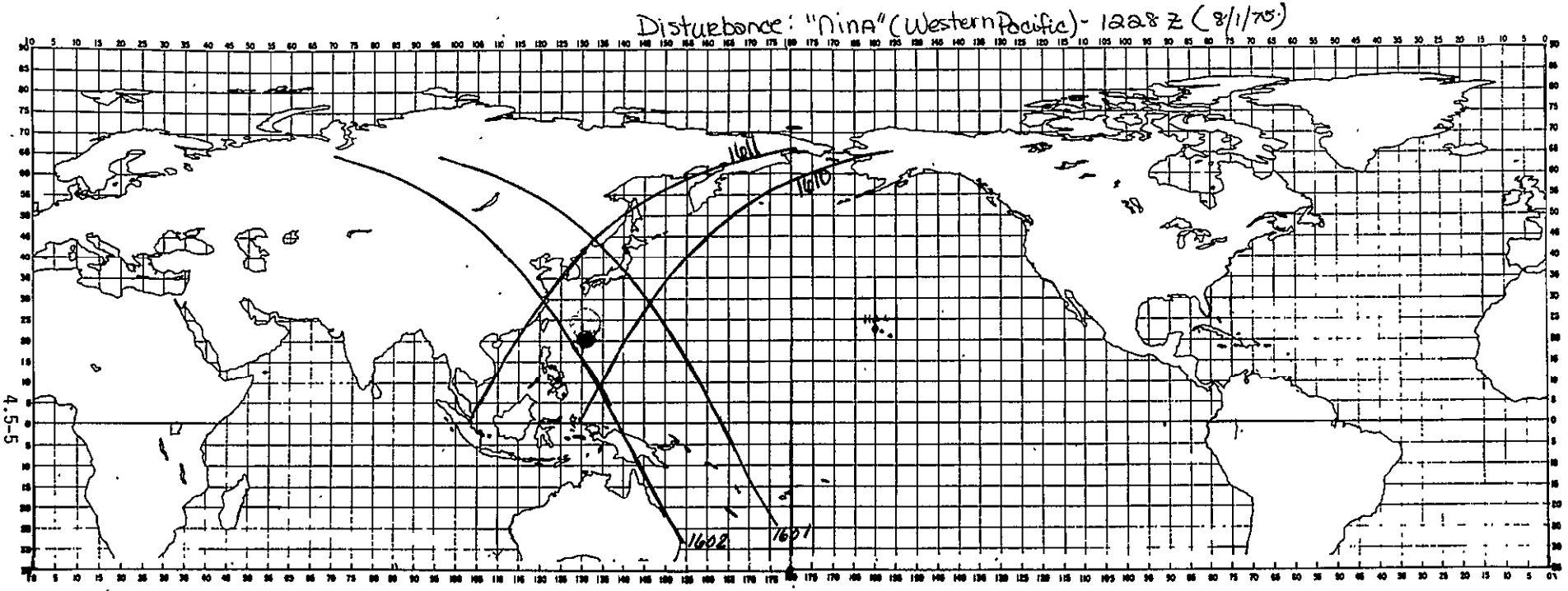


LOCATION

TROPICAL DEPRESSION/TROPICAL STORM (1133Z)

TIME	LATITUDE	LONGITUDE
0048Z	17.2N	134.2E
1133Z	17.6N	132.7E
2348Z	17.1N	132.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1587	-176.50	03 32 12 Z	05 19 Z	051408	052309	802	473
1589	132.85	06 56 47 Z	07 02 Z	Do			
1596	-42.11	18 43 16 Z	19 39 Z	Do			
1597	-169.74	20 30 03 Z	20 35 Z	Do			



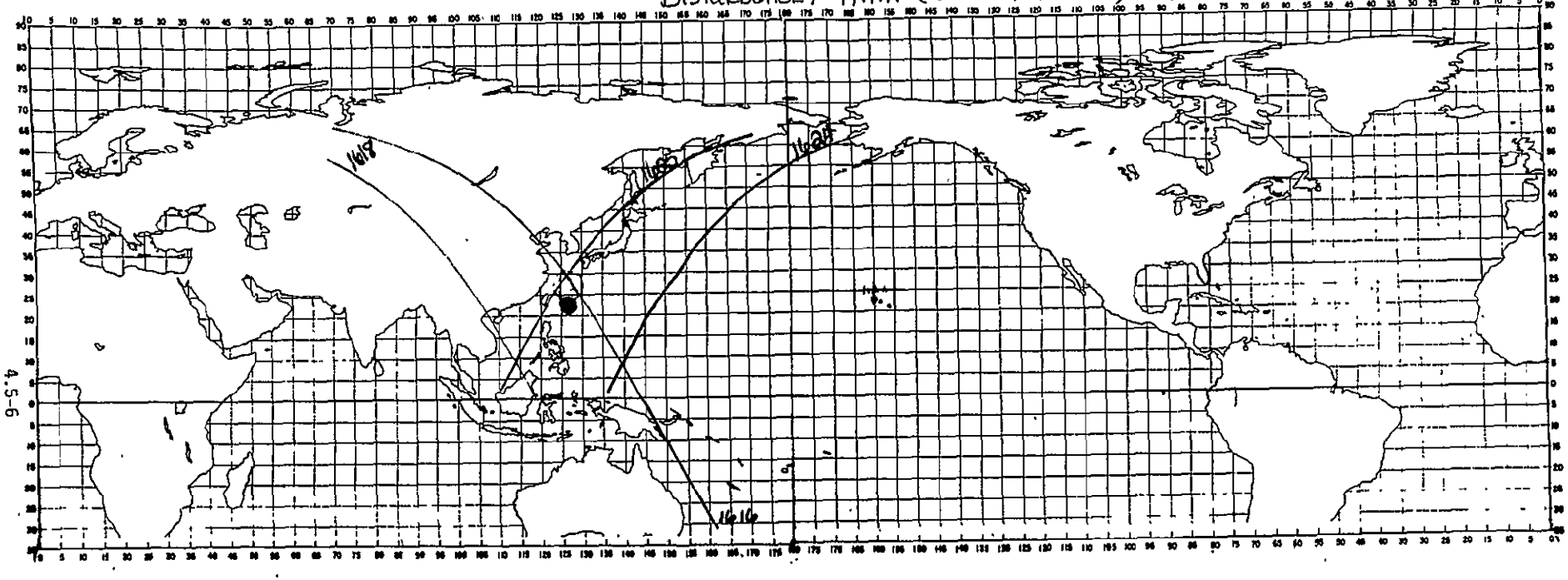
4.5-5

LOCATION TYPHOON

TIME	LATITUDE	LONGITUDE
1228Z	20.0N	130.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1601	-171.03	03 17 12 Z	05 08 Z	050705	050721	802	489
1602	163.64	04 58 59 Z	06 47 Z	064006	064927	802	491
1610	-38.94	18 33 18 Z	19 19 Z	Do			
1611	-64.35	20 16 08 Z	20 58 Z	Do			

Disturbance: "Nina" (Western Pacific) - 0042Z to 1130Z (8/2/75)



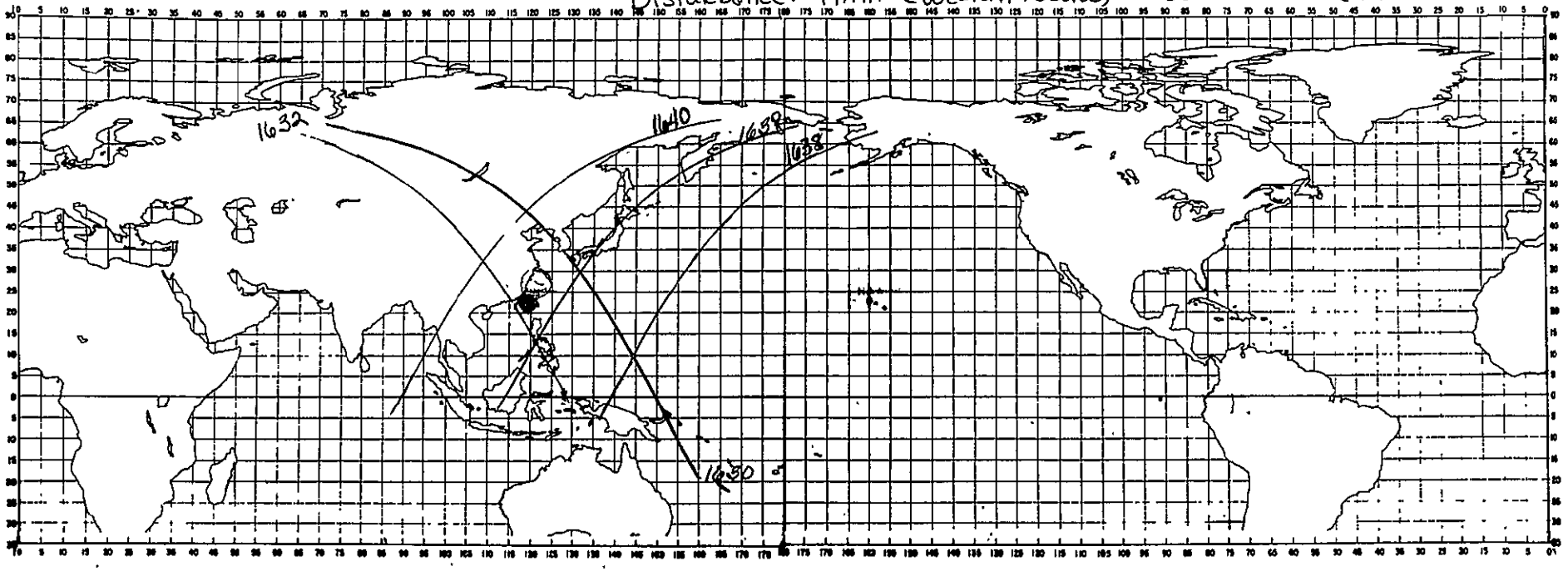
4.5-6

LOCATION

TIME	LATITUDE	LONGITUDE
0042Z	21.8N	127.1E
1130Z	23.2N	125.1E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1616	169.11	04 43 58 Z	06 33 Z	062144	063537	802	505
1618	118.48	08 07 32 Z	08 13 Z	Do			
1624	-33.47	18 13 16 Z	18 59 Z	Do			
1625	-58.79	20 00 02 Z	20 44 Z	203934	204524	803	507

Disturbance: "Nina" (Western Pacific) - 0136Z to 1225Z (8/3/75)



LOCATION		
TIME	LATITUDE	LONGITUDE
0136Z	23.4N	122.2E
1225Z	24.5N	118.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1630	174.59	04 28 57 Z	06 19 Z	060718	062131	802	524
1632	123.95	07 52 32 Z	07 59 Z	No			
1638	-87.09	18 03 14 Z	18 49 Z	No			
1639	-53.31	19 45 01 Z	20 29 Z	No			
1640	-18.64	21 23 48 Z	22 01 Z	No			

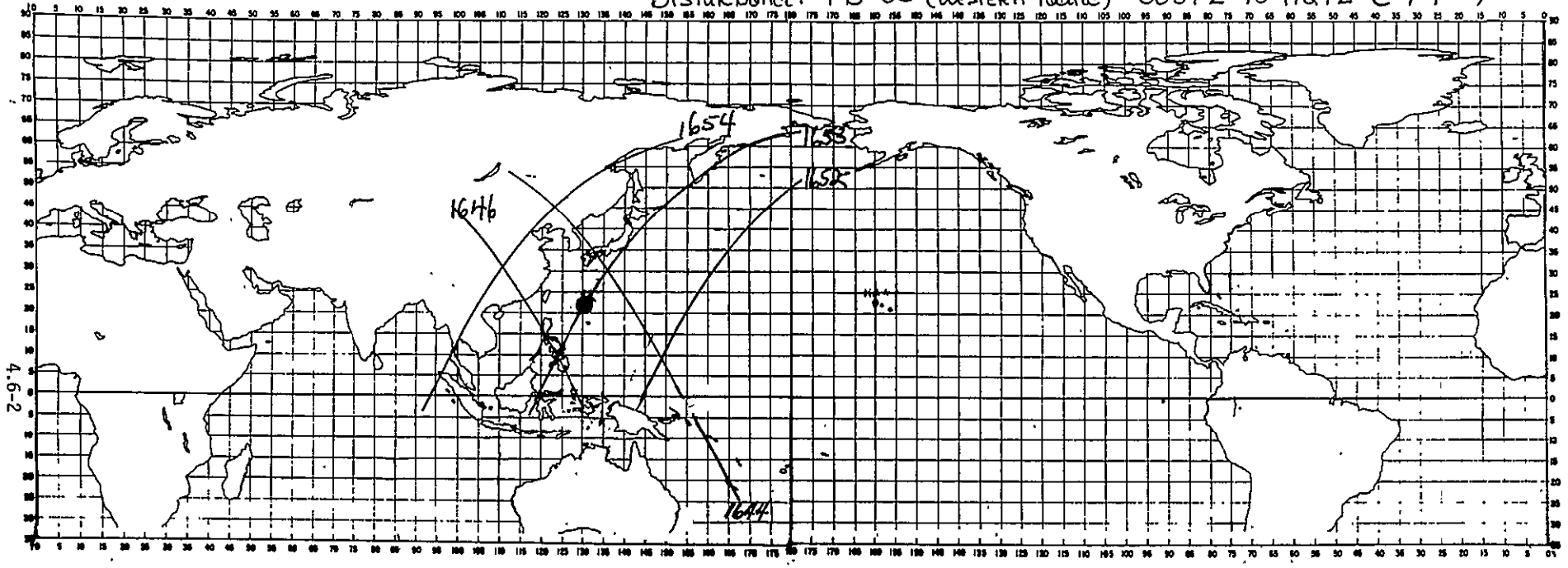
DISTURBANCE: TD-05 (WESTERN PACIFIC)

DATE: AUGUST 4 - AUGUST 6, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
8/4	0037Z 1124Z	18.0N 22.5	131.5E 130.0			
8/5	1317Z 1228Z	23.5N 24.0	127.5E 125.0			
8/6	0033Z 1119Z	25.5N 23.5	122.5E 122.5			No Classification

NOTE: See track map, page 4.1-7

Disturbance: TD-05 (Western Pacific) - 0037Z to 1124Z (8/4/75)



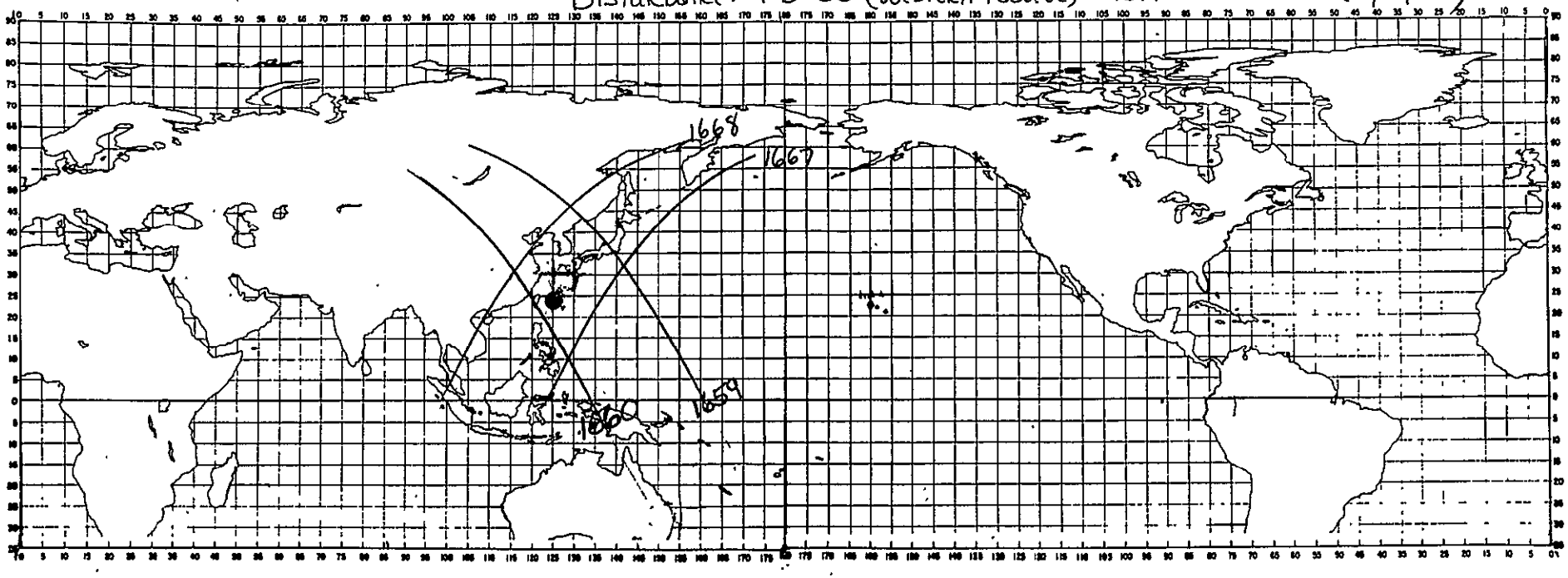
4.6-2

LOCATION

TIME	LATITUDE	LONGITUDE
0037Z	18.0N	131.5E
1124Z	22.5N	130.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1644	-179.93	04 13 57 Z	0604Z	055356	060718	802	4
1646	+129.42	07 37 31 Z	0733Z	Do			
1652	-22.52	17 43 14 Z	1830Z	Do			
1653	-47.84	19 30 01 Z	2014Z	Do			
1654	-73.17	21 11 48 Z	2156Z	Do			

Disturbance: TD-05 (Western Pacific) – 1317Z to 1228Z (8/5/75)



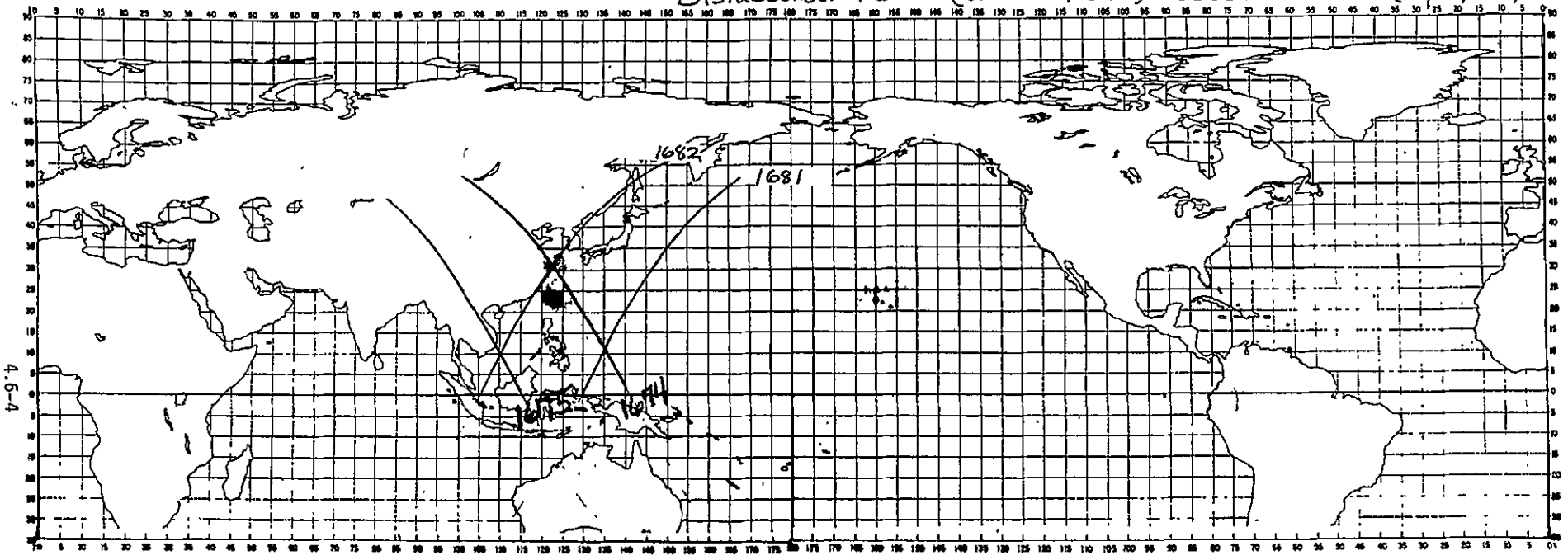
4.6-3

LOCATION

TIME	LATITUDE	LONGITUDE
1317Z	23.5N	127.5E
1228Z	24.0N	125.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1659	+160.22	05 40 43 Z	0551Z	No			
1660	+134.90	07 22 30 Z	0729Z	No			
1667	-42.36	19 15 00 Z	2000Z	No			
1668	-67.69	20 56 47 Z	2139Z	No			

Distuebance: TD-05 (Western Pacific) - 0033Z to 1119Z (8/6/76)



4.6-4

LOCATION

TIME	LATITUDE	LONGITUDE
0033Z	25.5N	122.5E
1119Z	23.5N	122.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1674	+140.37	07 07 30 Z	0716 Z	Do			
1675	+115.05	08 49 17 Z	0853 Z	Do			
1681	− 36.89	18 59 59 Z	1947 Z	Do			
1682	− 62.61	20 41 46 Z	2125 Z	Do			

TYPHOON ORA

(August 9 - August 12, 1976)

Meteorological History/Data

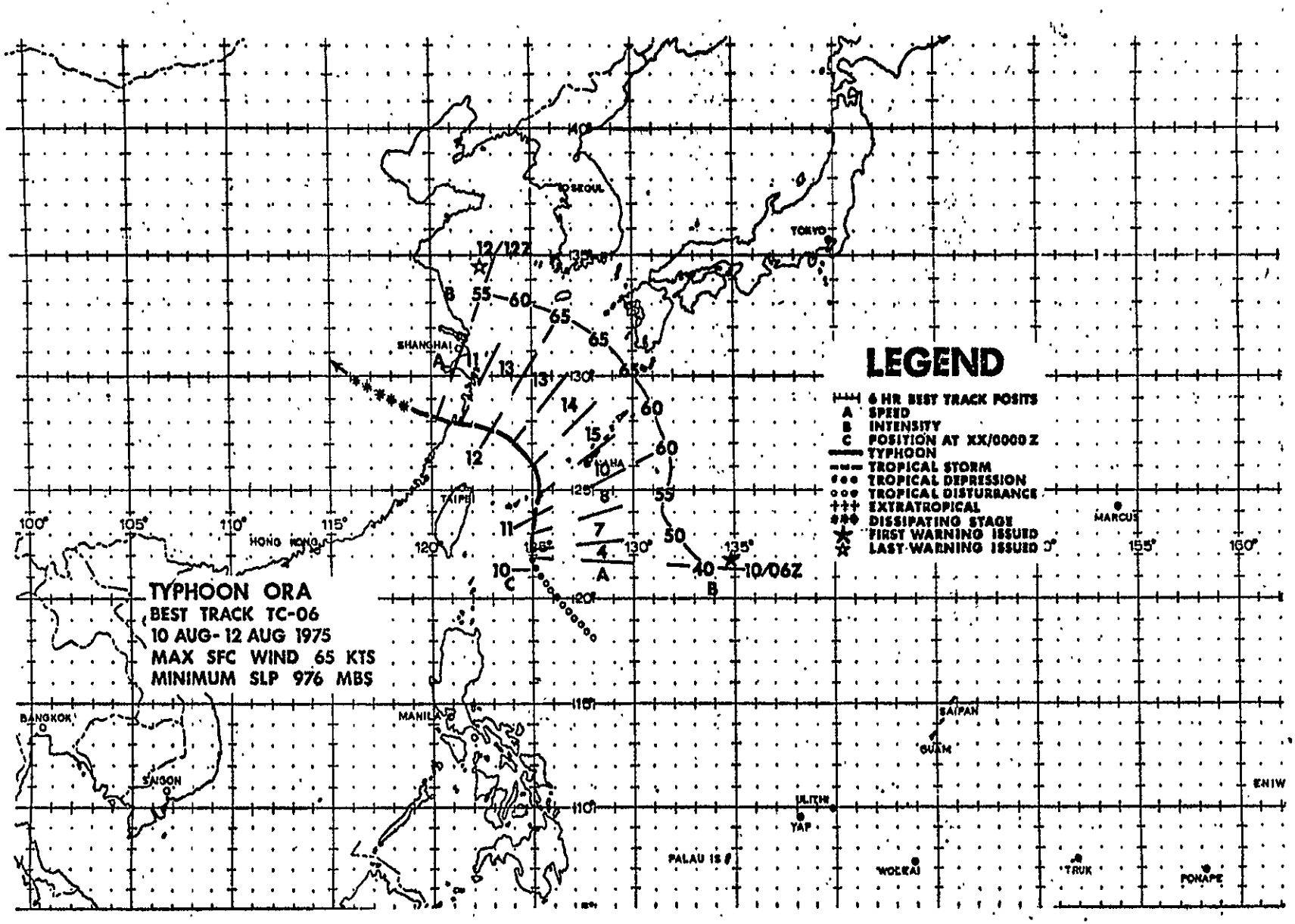
The third typhoon of the season, Ora, was small and short lived. Ora first appeared as a weak circulation in the near equatorial trough (drawn north by the influence of Typhoon Nina and TD-05) during the evening of the 8th. During the next 30 hours, this weak circulation moved northwestward at 6 knots showing little intensification.

On the morning of the 10th, a rapidly moving upper-level trough in the midlatitude westerlies was located to the northwest of the circulation. This trough provided a highly efficient high altitude outflow channel which allowed Ora to grow from a tropical depression into a typhoon within 30 hours. As this trough moved quickly toward the east, Ora responded with a north-northeastward movement. When Ora's eye passed over Miyako Jima at 0600Z on the 11th, the weather stations recorded 5-knot surface winds and a minimum pressure of 976 MB. Simultaneously, a ship (JL 11) 120 nm to the east reported 55-knot sustained winds. At 0749Z on the 11th, 50-knot gusts were recorded at Kadena AB, Okinawa, 150 nm northeast of Ora. As the trough passed to the east, the subtropical high over central China built rapidly eastward and Ora shifted northwestward and accelerated to 15 knots. By the morning of the 12th, Ora had turned westward at 13 knots until landfall was made on the 12th at 0800Z near Yung-chia on the central China coast.

From 0000Z on the 11th, until striking the China coast, Ora maintained typhoon strength winds of 65 knots. A surface high pressure cell moving eastward from the sea of Japan into the North Pacific rendered Ora a highly asymmetric storm with 30-knot winds extending 300 nm to the northeast and only 150 nm to the southwest.

Damage Estimates

Although little destruction was directly attributed to Ora, monsoon rains were spawned over the Philippines and caused widespread flooding and landslides. Choppy waters near Tocloban, Leyte capsized a crowded motorboat leaving 15 dead and 30 missing.

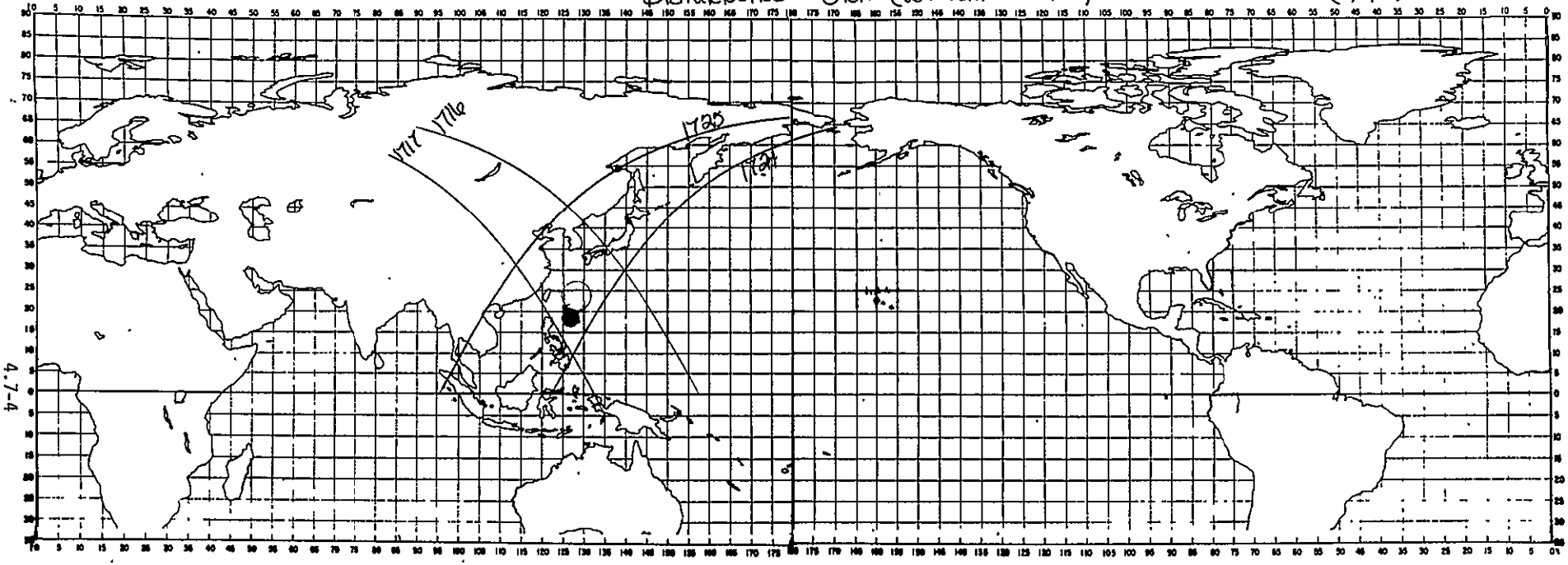

TYPHOON ORA
BEST TRACK TC-06
10 AUG- 12 AUG 1975
MAX SFC WIND 65 KTS
MINIMUM SLP 976 MBS
LEGEND
6 HR BEST TRACK POSITS
A SPEED
B INTENSITY
C POSITION AT XX/0000 Z
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
SEOUL
TOKYO
SHANGHAI
TAIPEI
HONG KONG
MANILA
BANGKOK
SAIGON
YAP
PALAU IS
WOLEAI
TRUK
PONAPE
GUAM
SAIPAN
MARCUS
ENIW
12/12Z
10/06Z

DISTURBANCE: "ORA" (WESTERN PACIFIC)

DATE: AUGUST 9 - AUGUST 12, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
8/9	0123Z	18.0N	128.0E			
	1208Z	20.0	125.5			
8/10	0022Z	21.7N	125.5E			
	1109Z	23.0	124.1			
8/11	0116Z	24.0N	124.9E			
	1206Z	26.0	124.8			
8/12	0016Z	27.2N	122.7E			
	1106Z	28.0	120.0			
		(Overland)				

Disturbance: "ORA" (Western Pacific) - 0123Z to 1208Z (8/9/75)

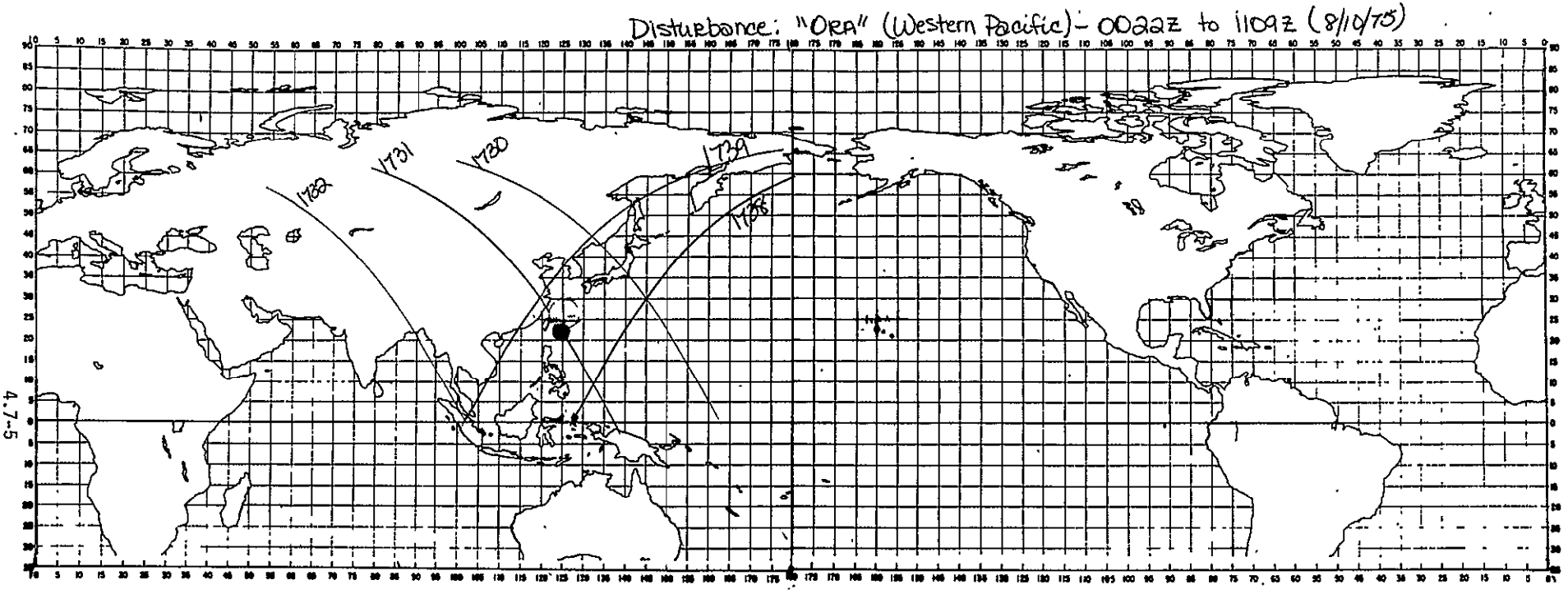


4.7-4

LOCATION

TIME	LATITUDE	LONGITUDE
0123Z	18.0N	128.0E
1208Z	20.0N	125.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1716	156.79	06 22 28 Z	06 31 Z	Do			
1717	131.47	08 04 15 Z	08 09 Z	Do			
1724	-45.79	19 56 44 Z	20 43 Z	203729	210339	802	88
1725	-71.11	21 38 31 Z	22 22 Z	Do			

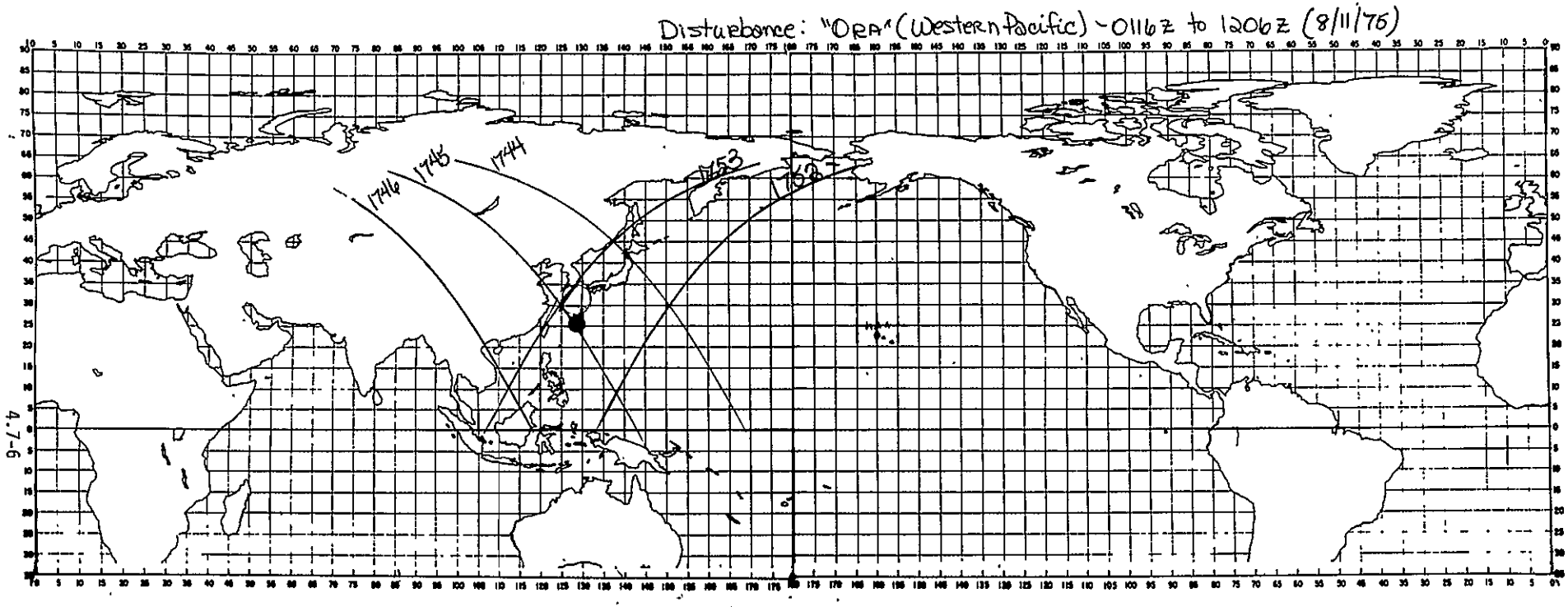


4.7-5

LOCATION

TIME	LATITUDE	LONGITUDE
0022Z	21.7N	125.5E
1109Z	23.0N	124.1E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1730	1108.87	06 07 27 Z	06 18 Z	Do			
1731	1316.95	07 49 14 Z	07 56 Z	Do			
1732	111.62	09 31 01 Z	09 35 Z	Do			
1738	-40.32	19 41 44 Z	20 27 Z	Do			
1739	-165.64	21 23 31 Z	22 07 Z	Do			

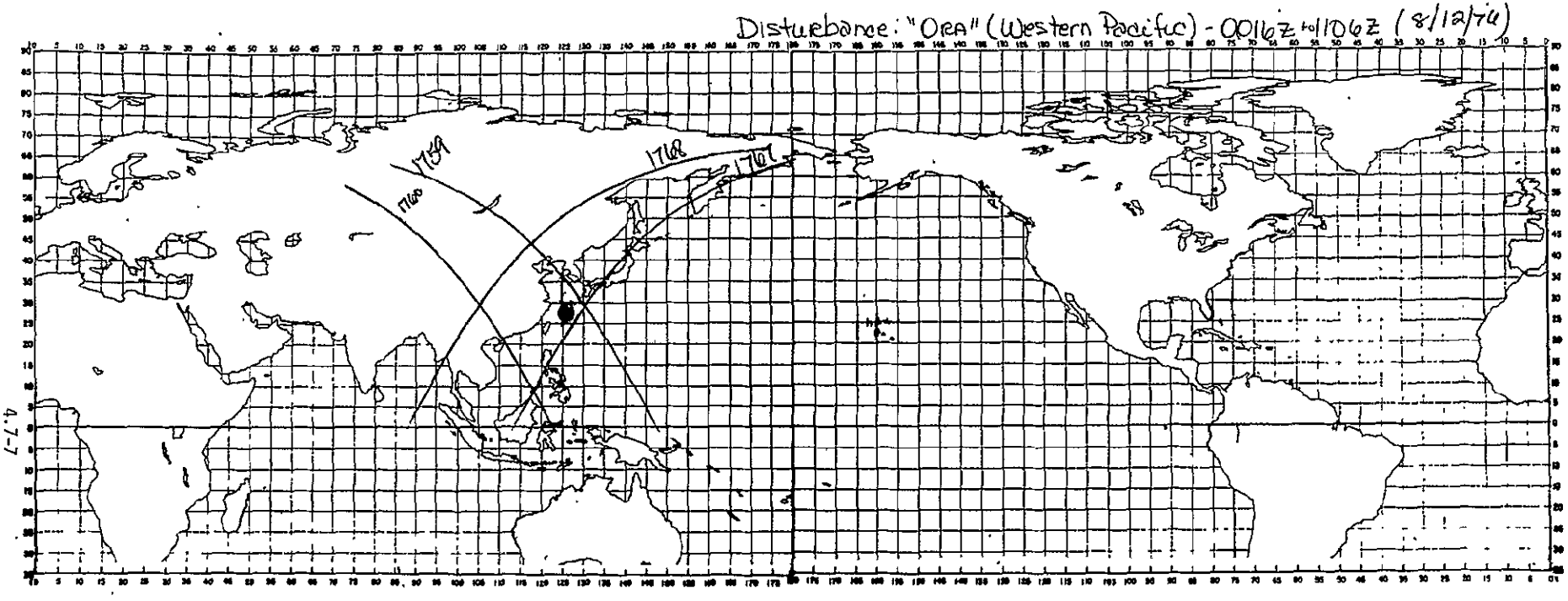


4.7-6

LOCATION

TIME	LATITUDE	LONGITUDE
0116Z	24.0N	124.9E
1206Z	26.0N	124.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1744	167.74	05 52 26 Z	06 04 Z	Do			
1745	142.42	07 34 13 Z	07 42 Z	Do			
1746	117.10	09 16 00 Z	09 23 Z	Do			
1752	-34.84	19 26 43 Z	20 12 Z	Do			
1753	-60.17	21 08 30 Z	21 50 Z	Do			



4.1-7

LOCATION

TIME	LATITUDE	LONGITUDE
0016Z	27.2N	122.7E
1106Z	28.0N	120.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1759	147.89	07 19 13 Z	07 28 Z	No			
1760	122.63	09 00 04 Z	09 07 Z	No			
1767	-54.67	20 53 24 Z	21 36 Z	213304	215836	802	134
1768	-79.99	22 35 11 Z	23 14 Z	No			

TYPHOON PHYLLIS

(August 12 - August 17, 1975)

Meteorological History/Data

Since early August, a monsoon trough had extended from the remains of Typhoon Nina in central China to an area west of Guam. A number of surface circulations appeared in this trough as early as the 8th of August, but it was not until the morning of the 11th that Phyllis first appeared as a tropical disturbance from 380 nm west-southwest of Guam.

The first warning on what was to become the fourth typhoon of 1975, was issued on the morning of the 12th. Aircraft reconnaissance located TD-07 395 nm west-southwest of Guam with center winds of 30 knots. At 0600Z on the 12th, the depression was upgraded to a 35-knot tropical storm. Aircraft reported multiple surface centers and a weak and diffuse 700 mb center.

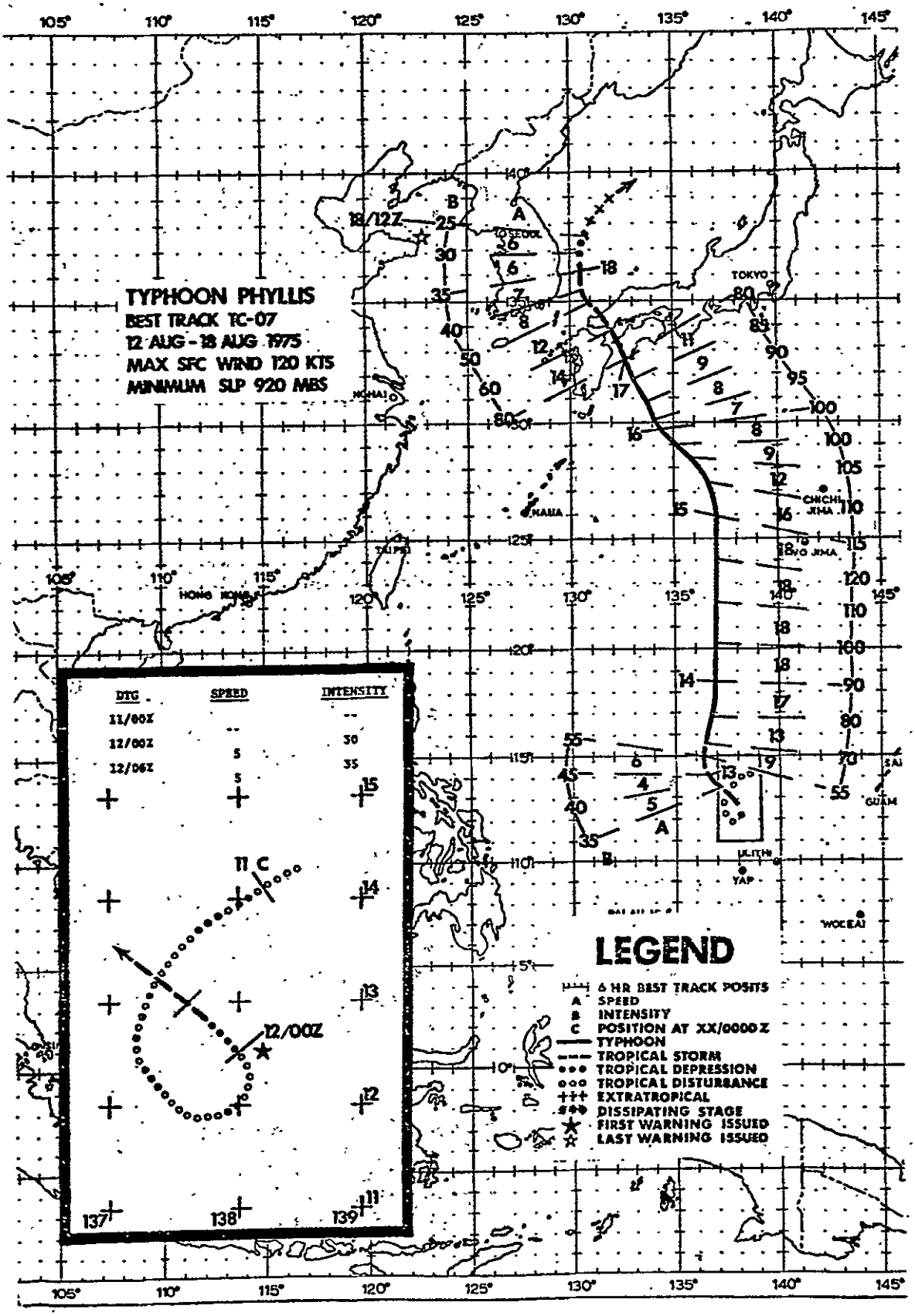
Initially, the upper-level anticyclone was located 110 nm west of the surface center. However, by the morning of the 13th the upper and lower levels had become vertical. On the 13th at 0833Z, aircraft reported a closed wall cloud with an eye 30 nm in diameter. A Russian research vessel (EREC), reported 60-knot surface winds 60 nm west-southwest of Phyllis at 1200Z on the 13th; thus, Phyllis was upgraded to typhoon with maximum winds of 70 knots.

By the 13th, the mid-tropospheric ridge over China began to weaken while the ridge east of Japan intensified. Twenty-four hours later, Phyllis' forward speed had increased to 18 knots. The typhoon attained a maximum intensity of 120 knots on the 14th at 1800Z after aircraft had recorded a minimum sea level pressure of 920 mb at 1505Z. By the 15th, Phyllis' movement had slowed to 7 knots and had become northwestward as the midtropospheric ridge built westward across Japan.

After turning to the northwest, Phyllis once again accelerated, and by the afternoon of the 16th, was located 165 nm southeast of the Japanese Island of Shikoku. As Phyllis approached Japan, Shimizu (WMO station 47898, elev 99 ft), recorded sustained surface winds of 77 knots on the 16th at 1800Z and a minimum pressure of 970 mb at 2300Z. Murotomisaki (WMO station 47899, elev 606 ft), recorded sustained surface winds of 73 knots at 2000Z on the 16th. Phyllis, with 80-knot sustained winds, made landfall during the morning of the 17th near the southwestern edge of Shikoku.

Damage Estimates/Loss of Life

In her wake Phyllis left extensive damage and loss of life. On Shikoku alone there were at least 60 dead, 146 injured, and 12 missing due to the combination of heavy rains, flooding and numerous landslides. At least 489 houses were reported collapsed, 577 damaged, 58 washed away and thousands inundated. Phyllis passed 20 nm to the west of Iwakuni MCAS which reported maximum gusts of 38 knots.



DISTURBANCE: "PHYLLIS" -TD-07 (WEST PACIFIC)

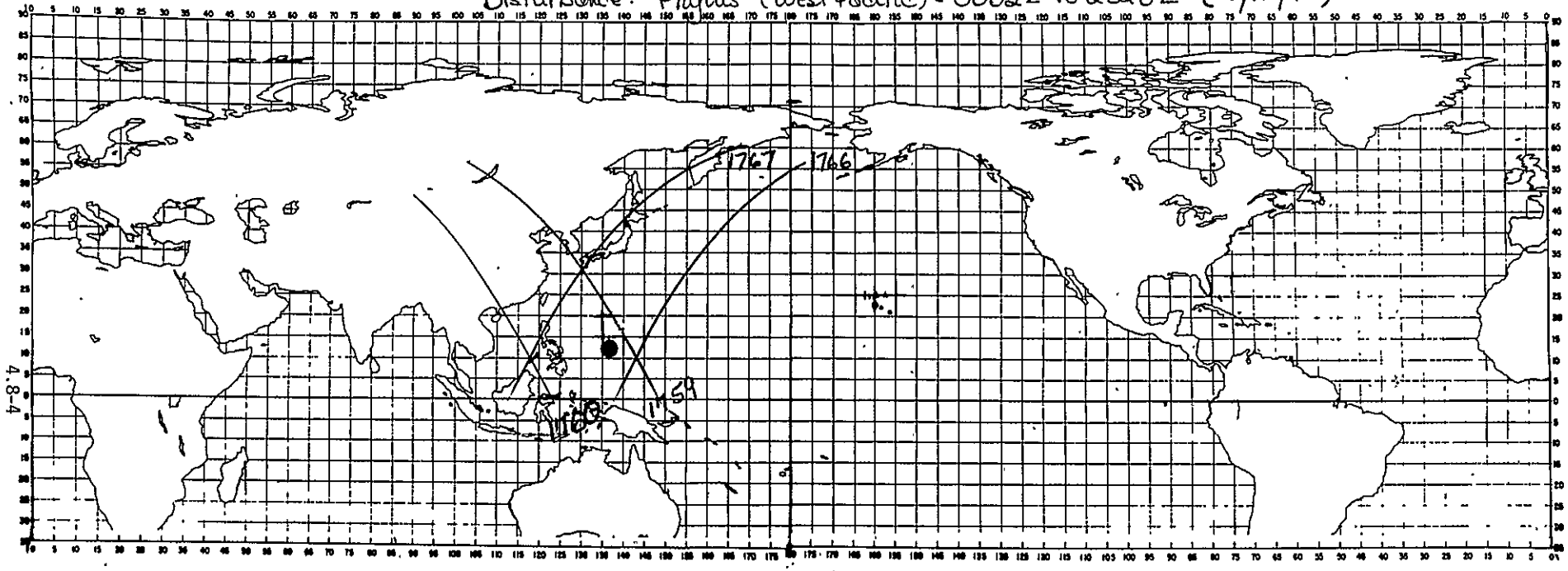
DATE: AUGUST 12 - AUGUST 17, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
8/12	0002Z ? 2320Z	13.0N 14.5 13.3	138.0E 136.0 136.3		30	Tropical Disturbance
8/13	1156Z	15.0N	135.5E		70	Typhoon
8/14	00??Z 1059Z 2300Z	18.4N 22.9 25.7	136.5E 136.5 137.0	920*	120*	
8/15	0157Z	28.8N	135.5E			
8/16	0005Z 1057Z	29.4N 31.0	134.2E 134.0	970*	77	
8/17	0058Z 1154Z 2358Z	32.2N 35.2 36.3	132.7E 133.0 132.3			

* 920 mb at 1505Z
120 kt at 1800Z

** Reported at 2300Z

Disturbance: "Phyllis" (West Pacific) - 0002Z to 2320Z (8/12/75)

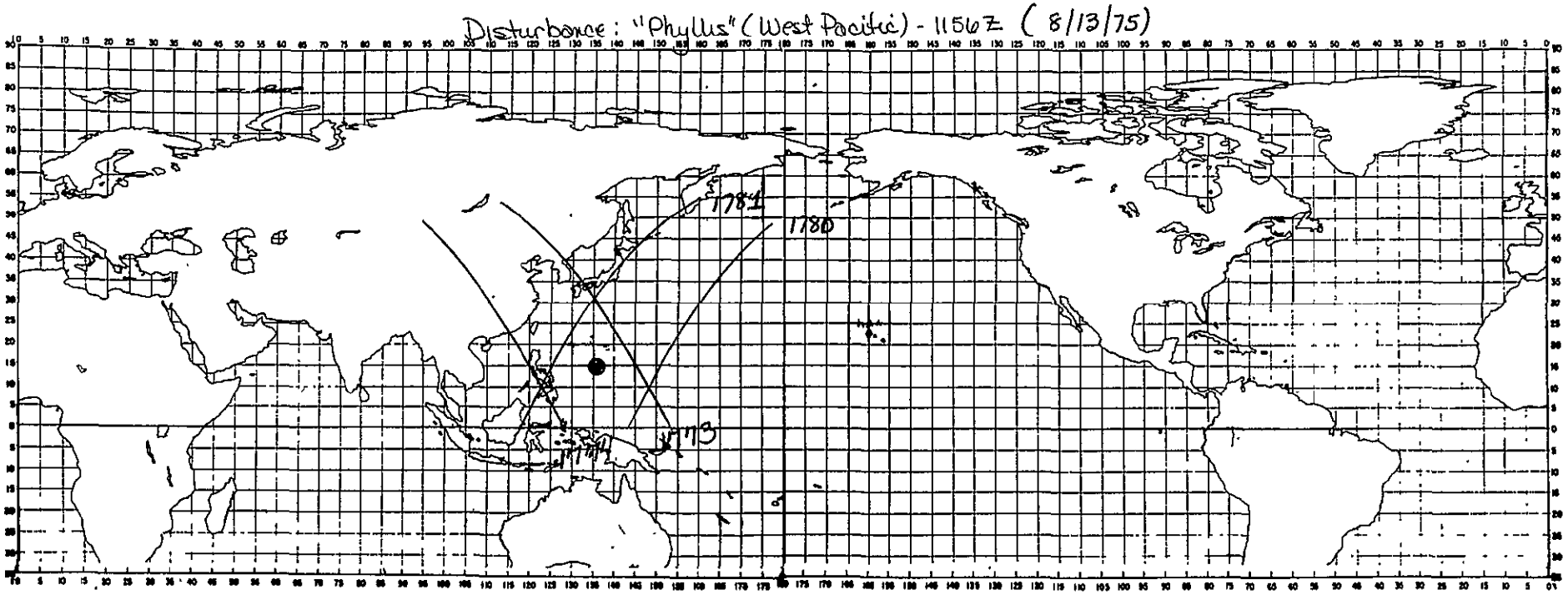


4.8-4

LOCATION

TIME	LATITUDE	LONGITUDE
0002Z	13.0N	138.0E
2320Z	13.3N	136.3E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1759	+147.89	07 19 13 Z	0724Z	Do			
1760	+122.60	09 00 54 Z	0901Z	Do			
1766	-29.35	19 11 37 Z	2000Z	Do			
1767	-54.67	20 53 24 Z	2138Z	212304	215836	802	134

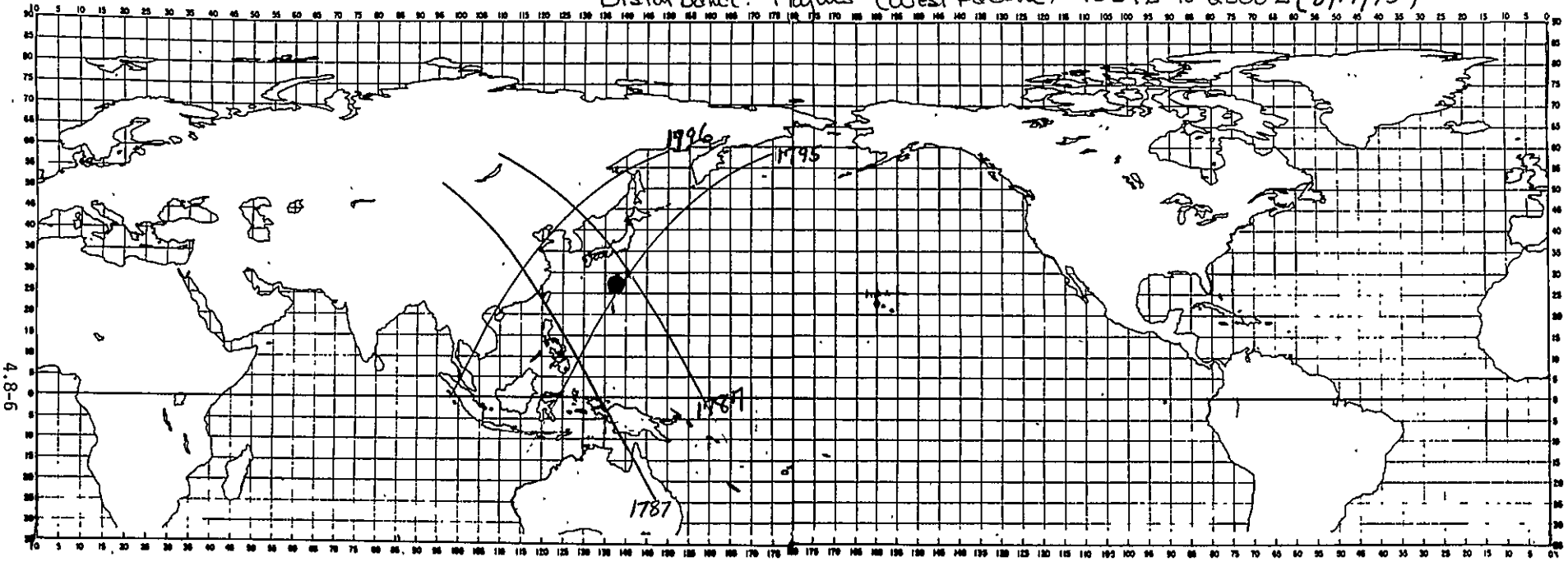


LOCATION

TIME	LATITUDE	LONGITUDE
1156Z	15.0N	135.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1773	+153.39	07 04 06 Z	0710 Z	D_0			
1774	+128.07	08 45 53 Z	0848 Z	D_0			
1780	- 23.87	18 56 36 Z	1945 Z	D_0			
1781	- 49.19	20 38 23 Z	2133 Z	211845	212845	802	145

Disturbance: "Phyllis" (West Pacific) - 1059Z to 2300Z (8/14/75)



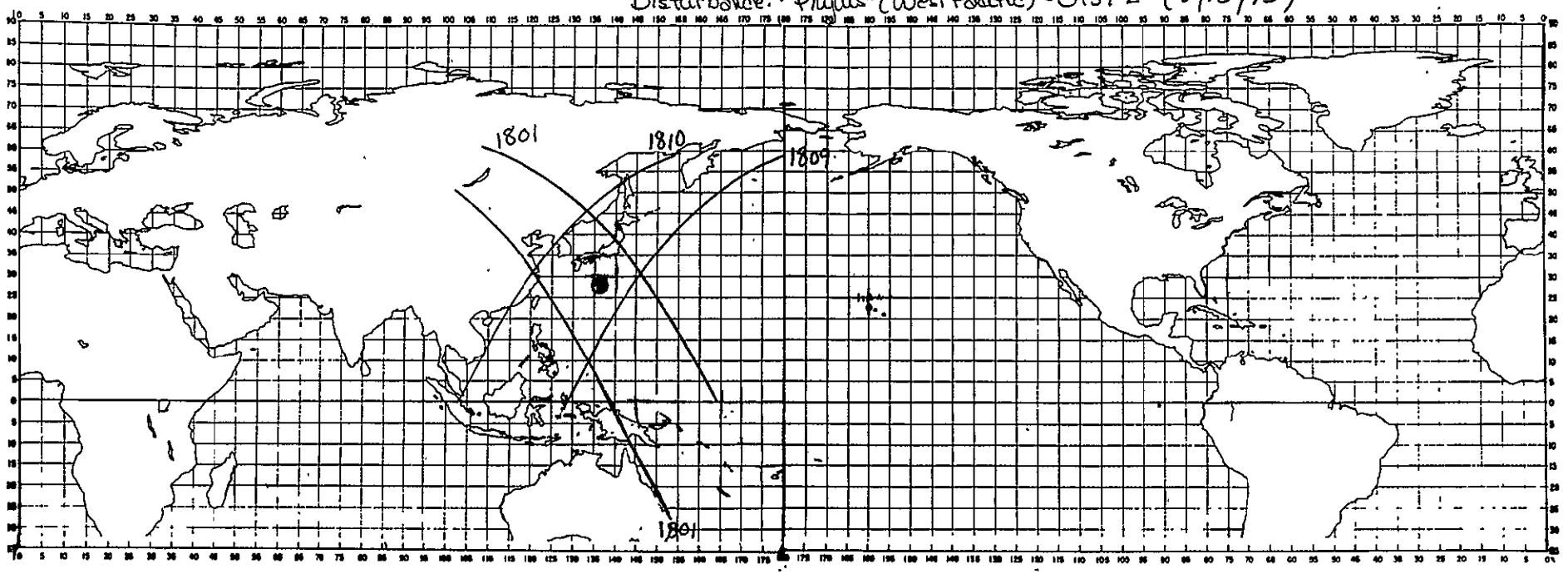
4.8-6

LOCATION

TIME	LATITUDE	LONGITUDE
1059Z	22.9N	136.6E
2300Z	25.7N	137.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1787	+158.87	06 49 05 Z	0658Z	Do			
1787	+158.87	06 49 05 Z	0836Z	081343	083756	802	147
1795	-43.72	20 23 22 Z	2106Z	210434	211434	802	156
1796	-69.04	22 05 09 Z	2244Z	Do			

Disturbance: "Phyllis" (West Pacific) - 0157 Z (8/15/75)

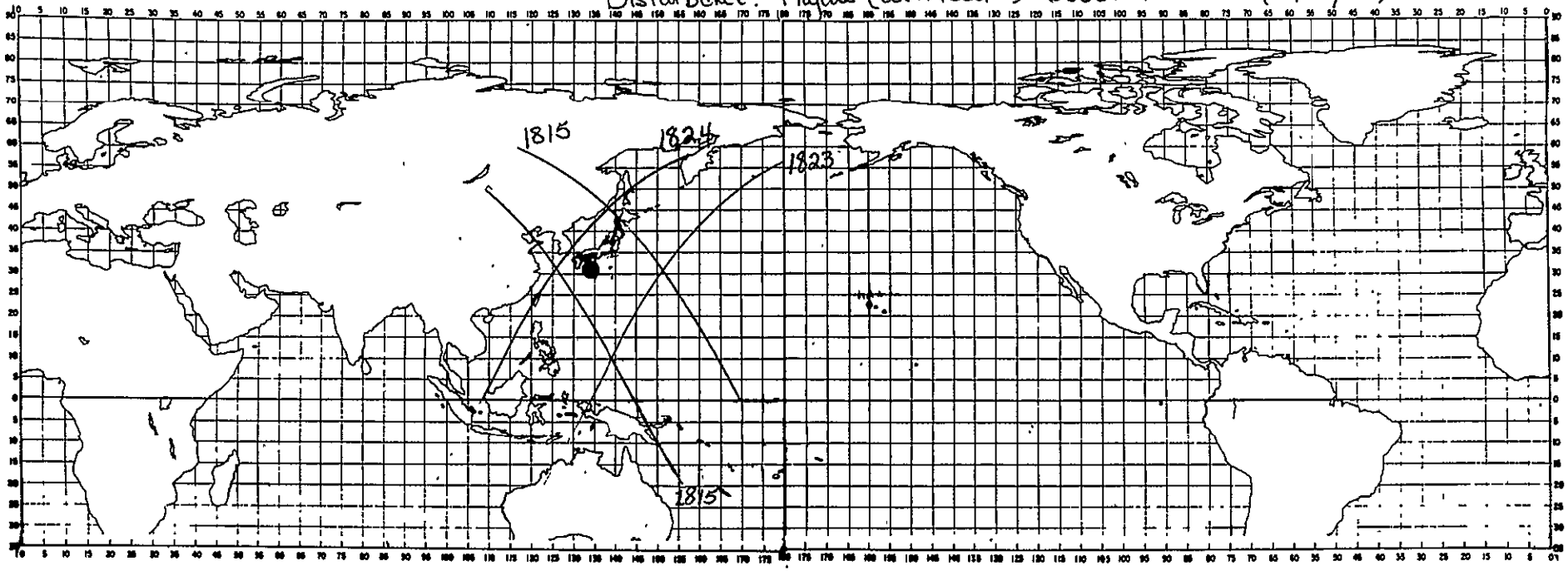


4.8-7

LOCATION

TIME	LATITUDE	LONGITUDE
0157Z	28.8N	135.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1801	+164.34	06 34 04 Z	0645 Z	No			
1801	+164.34	06 34 04 Z	0823 Z	075938	082448	802	160
1809	- 38.24	20 08 20 Z	2052 Z	205028	211632	802	167
1810	- 63.56	21 50 07 Z	2230 Z	No			

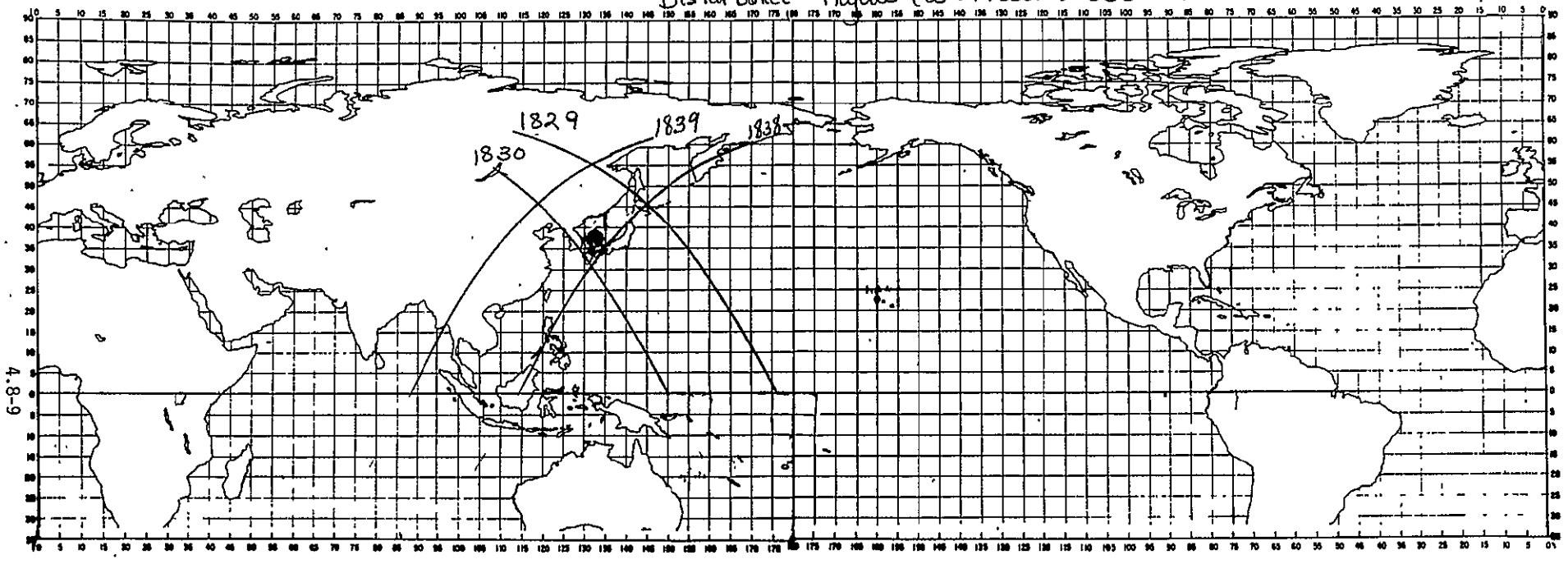


LOCATION

TIME	LATITUDE	LONGITUDE
0005Z	29.4N	134.2E
1057Z	31.0N	134.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1815	+169.82	06 19 03 Z	0631Z	No			
1815	+169.82	06 19 03 Z	0809Z	074559	081056	802	170
1823	-32.76	19 53 19 Z	2037Z	No			
1824	-58.09	21 35 06 Z	2216Z	221455	222102	802	180

Disturbance: "Phyllis" (West Pacific) - 0058Z to 1154Z to 2358Z (8/17/75)



LOCATION

TIME	LATITUDE	LONGITUDE
0058Z	32.2N	132.7E
1154Z	35.2N	133.0E
2358Z	36.3N	132.3E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1829	+175.30	06 04 02 Z	0619Z	No			
1830	+149.97	07 45 49 Z	0756Z	No			
1838	-52.51	21 20 03 Z	2200Z	215849	220837	802	193
1839	-77.93	23 01 52 Z	2337Z	No			

DISTURBANCE: NO NAME-B

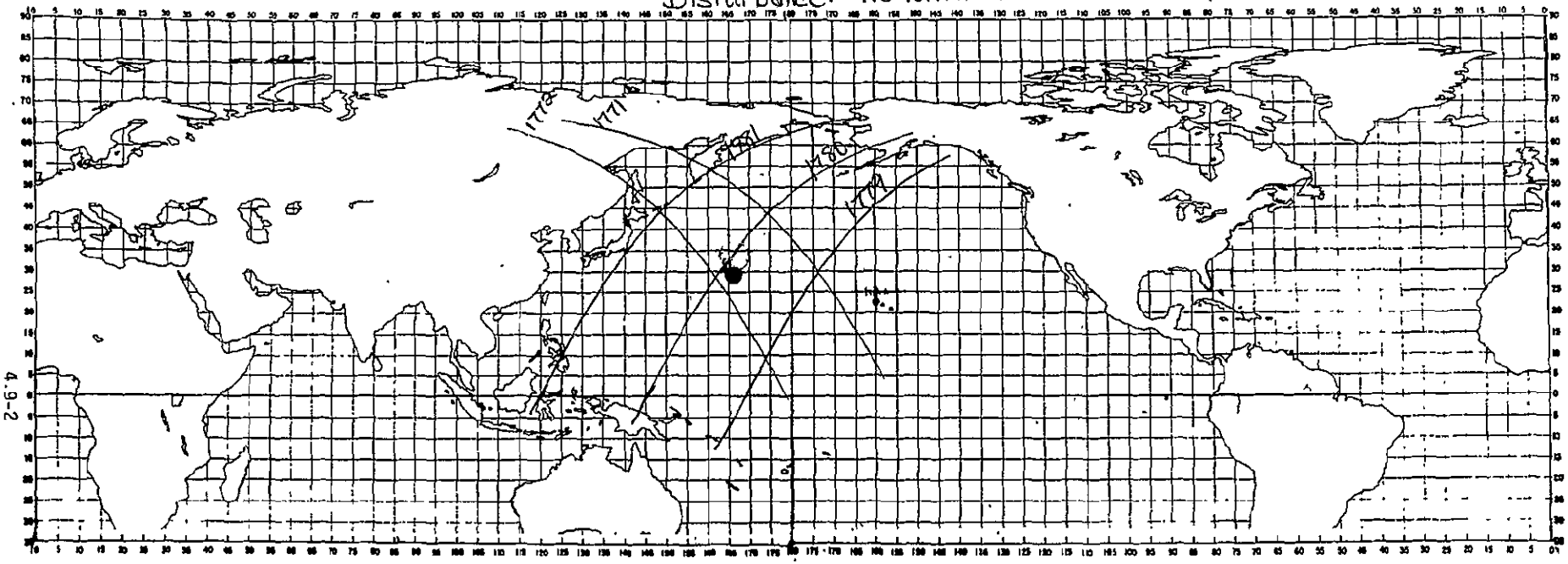
DATE: AUGUST 13 - AUGUST 16, 1975

LOCATION: WESTERN PACIFIC

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
8/13	? 2214Z	28.0N 29.0	166.0E 166.0			
8/14	0907Z 2114Z	29.0N 30.0	166.0E 165.5			
8/15	1002Z 2209Z	30.0N 31.0	163.5E 161.5			
8/16	0902Z	31.0N	160.0E			

* Not identified on list shown in Table 4-1. Apparently this was a very minor tropical depression.

Disturbance: NO NAME-8 — 2214 Z (8/13/76)



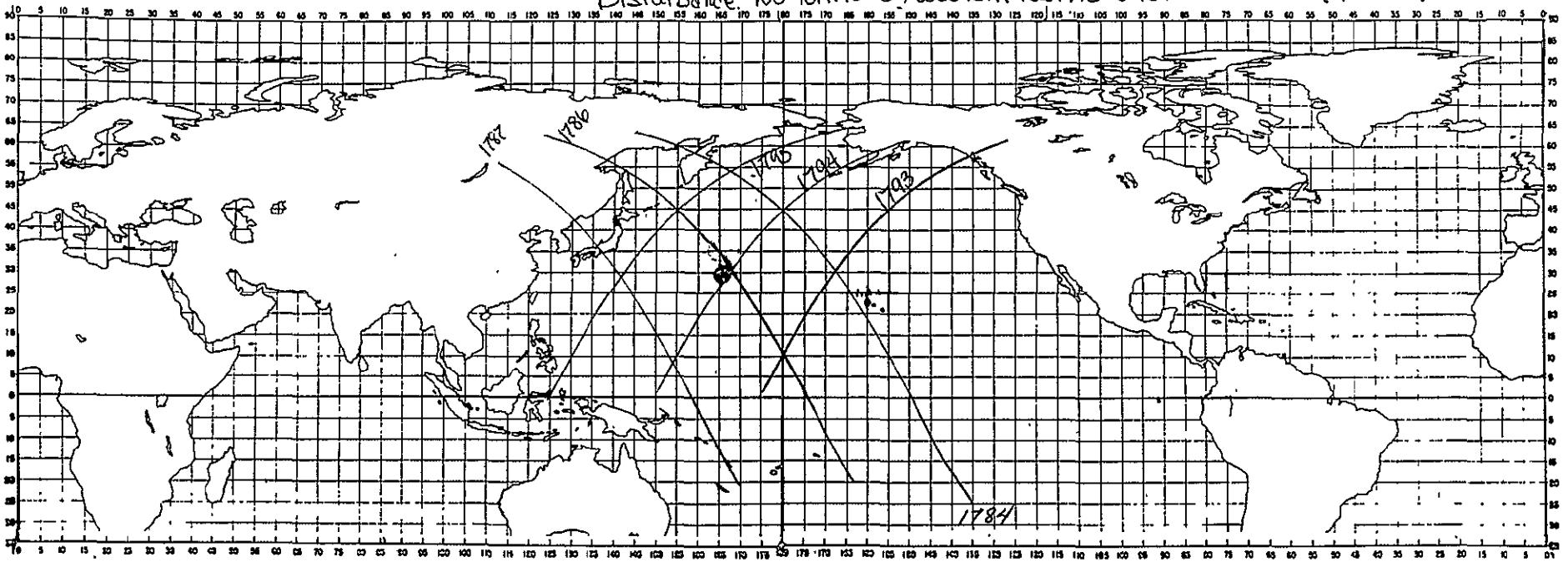
4.6-2

LOCATION

TIME	LATITUDE	LONGITUDE
2214Z	29 ON	166.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1771	-156.96	03 40 32 Z	03 53 Z	No			
1772	178.72	05 38 19 Z	05 30 Z	No			
1779	1.45	17 14 49 Z	17 59 Z	No			
1780	-23.87	18 53 38 Z	19 35 Z	No			
1781	-49.19	20 38 23 Z	21 15 Z	No			

Disturbance: NO NAME-B, Western Pacific - 0907Z to 2114Z (8/14/75)



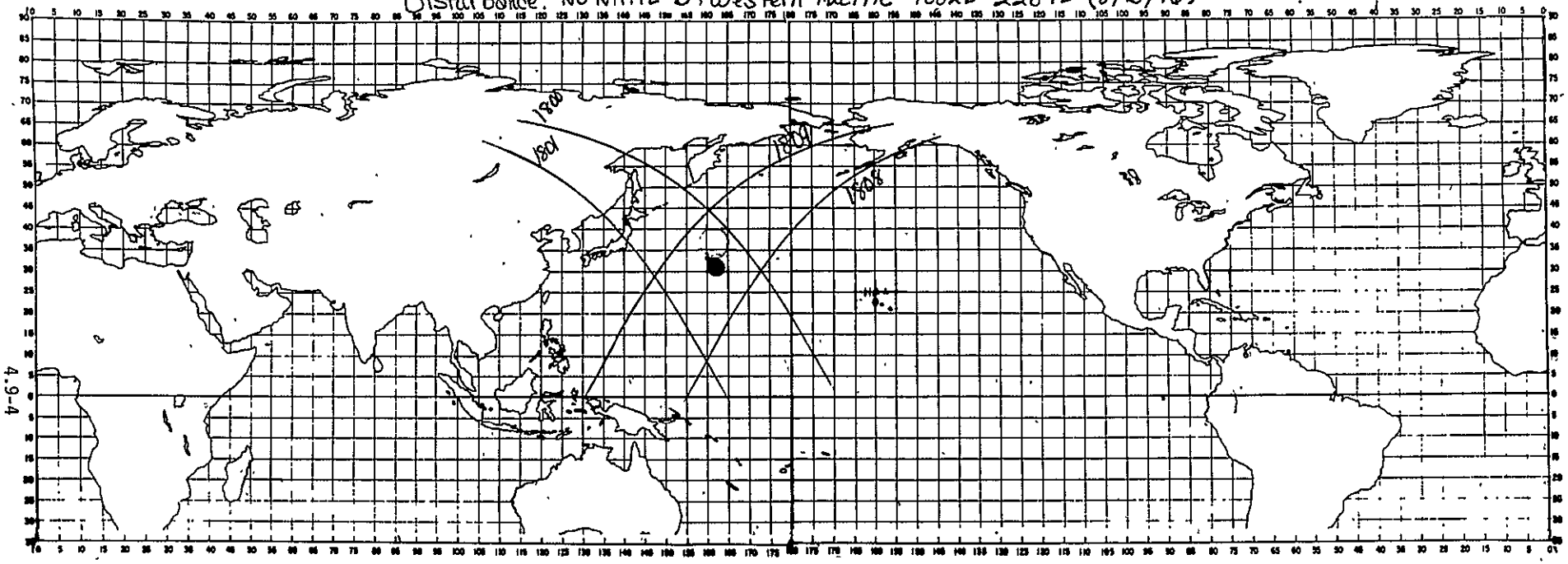
4.9-3

LOCATION

TIME	LATITUDE	LONGITUDE
0907Z	29.0N	166.0E
2114Z	30.0N	165.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1784	-125.18	01 43 40Z	03 39Z	No			
1786	-175.81	05 07 18Z	0516Z	No			
1787	158.87	06 49 05Z	0655Z	No			
1793	6.93	16 59 48Z	17 44Z	No			
1794	-18.39	18 41 35Z	19 24Z	No			
1795	-43.72	20 23 22Z	21 01Z	2104/34	2114/34	802	156

Disturbance: NO NAME-B; Western Pacific - 1002Z - 2209Z (8/15/76)

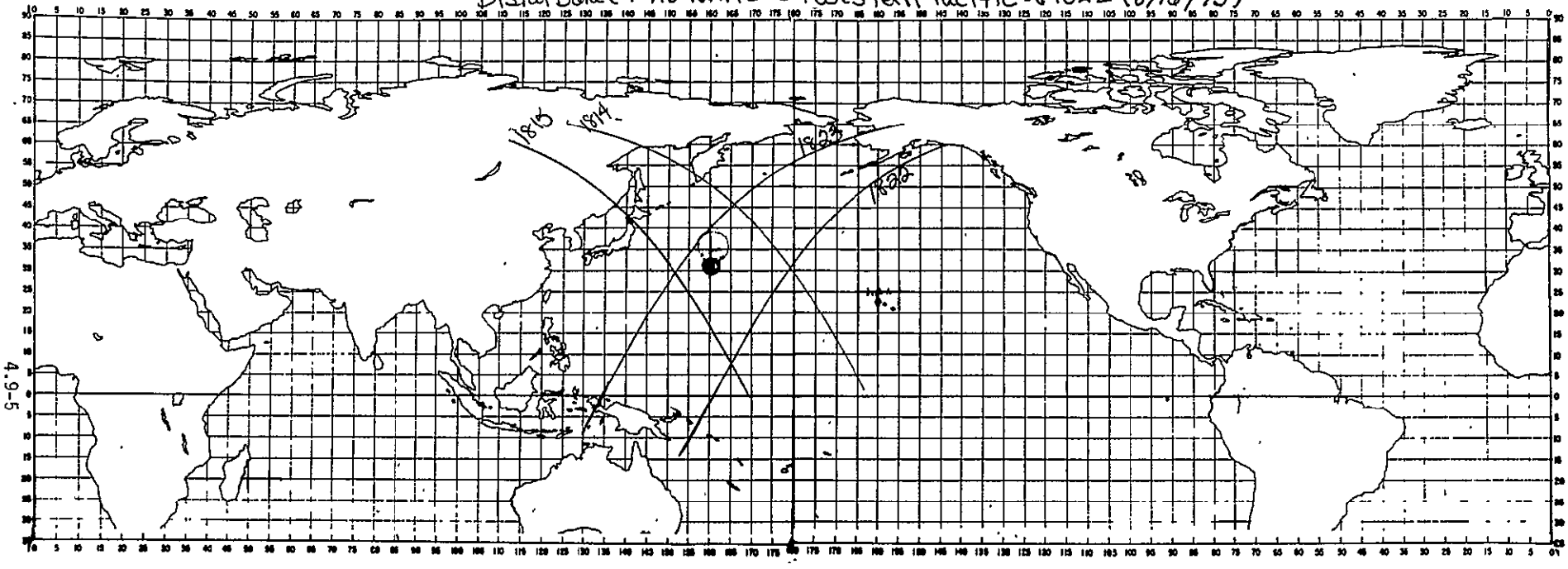


4.9-4

LOCATION

TIME	LATITUDE	LONGITUDE
1002Z	30 0 N	163.5E
2209Z	31 0 N	161.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1800	-170.33	04 52 17 Z	05 03 Z	Do			
1801	164.34	06 34 04 Z	06 41 Z	Do			
1808	-12.01	18 26 33 Z	19 10 Z	Do			
1809	-38.24	20 08 20 Z	20 46 Z	2050:28	2116:32	802	167



4.9-5

LOCATION

TIME	LATITUDE	LONGITUDE
0902Z	31.0N	160.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1814	-164.86	04 37 16 Z	04 50 Z	No			
1815	169.82	06 19 03 Z	06 27 Z	No			
1822	-7.44	18 11 32 Z	18.54 Z	No			
1823	-32.76	19 53 19 Z	2033 Z	No			

TYPHOON RITA

(August 16 - August 23, 1975)

Meteorological History/Data

The third typhoon in August, Rita, made landfall in Japan closely following the wake of Typhoon Phyllis. Due to heavy rains brought by Rita, the storm proved to be the most damaging to affect the northern Japanese islands since 1965.

The typhoon's birth can be traced to the development of a monsoon depression some 180 nm southeast of Iknawa on the 18th. Drifting first east then westward, Rita began to gain strength as aircraft reconnaissance reports verified storm force winds in the circulation on the following day. Due to a weakening subtropical high cell east of Japan, heights began to fall north of Rita. In response, the storm reversed track to an easterly direction a few miles off the northern tip of Okinawa. A minimum pressure of 983.4 mb was registered at Kadena Air Base on the 20th at 0620Z although winds were comparatively light with a peak gust of 37 knots from the northwest recorded at 0514Z.

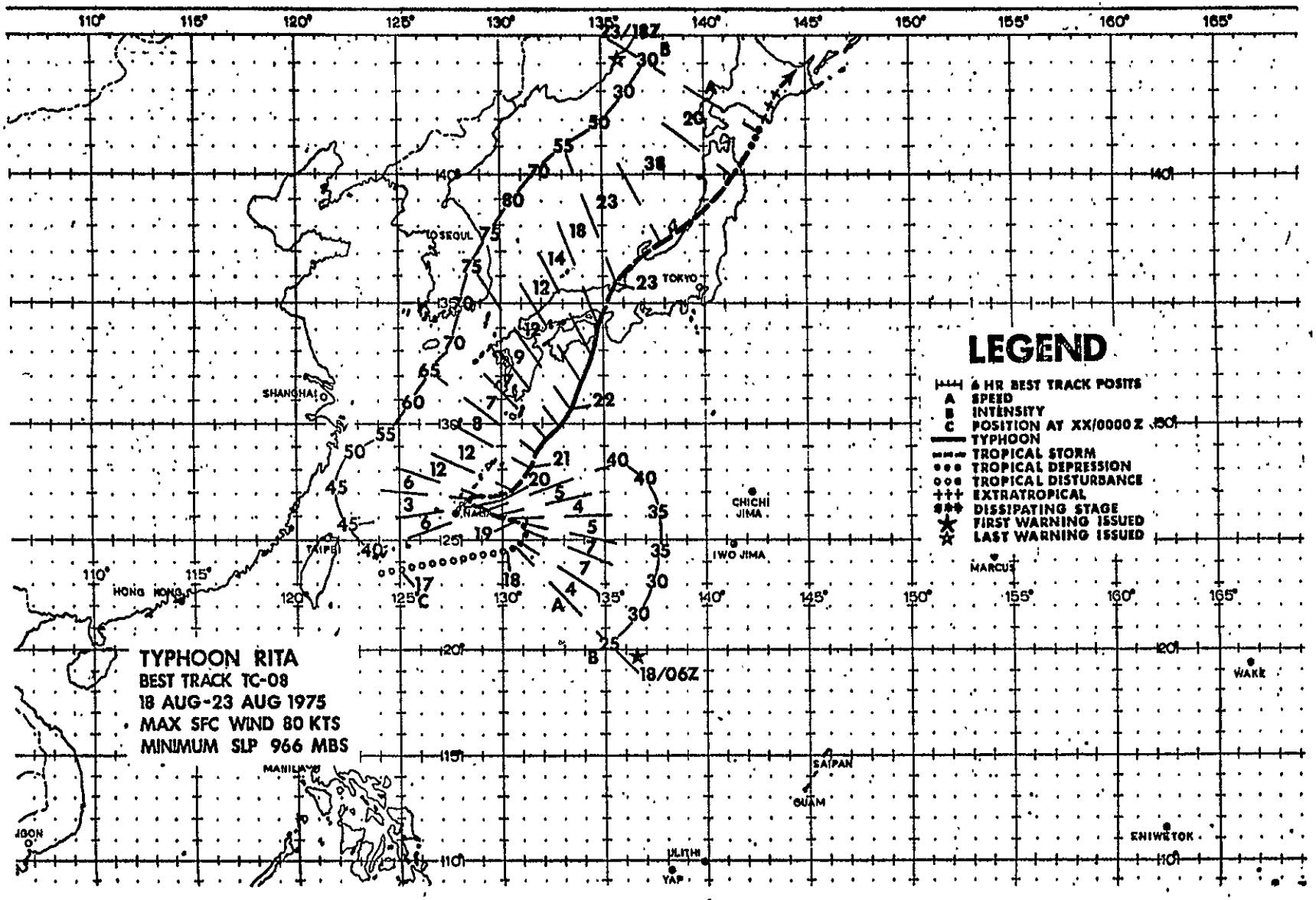
An approaching short wave over Manchuria began to draw Rita on a more northward course late on the 20th. By the afternoon of the 21st, typhoon force winds were reached and Rita's circulation had grown significantly in size. Due to the building pressure gradient associated with the high cell east of Japan, gale force winds extended some 300 nm in the typhoon's eastern semicircle. As the short wave continued to approach the typhoon, Rita accelerated gradually in a north-northeasterly direction, making landfall 30 nm west of Osaka late on the 22nd. Prior to landfall, Rita's 40-60 nm diameter eye passed over Murotomisaki (WMO station 47899, elev 606 ft), Shikoku. The station experienced a pressure reading of 966.3 mb at 1200Z and sustained surface winds of 80 knots.

Quickly crossing central Honshu, Rita veered slightly and accelerated to speeds of 30-35 knots ahead of an advancing cold front in the Sea of Japan. First tracking along the western coast, Rita crossed the northern portion of Honshu, finally emerging back into the Pacific on a northeasterly heading. Strong gusty winds occurred along the exposed southern coast of Honshu between the Kii and Boso peninsulas. Southerly winds gusting near 55 knots were recorded at Yokota Air Base between 0300Z and 0400Z on the 23rd.

Merging with the frontal zone south of Hokkaido, Rita continued to track northeastward as an extratropical low.

Damage Estimates/Loss of Life

Torrential rains swept Hokkaido with amounts totaling near 8.2 inches in 24 hours. Landslides and flash flooding as a result of the rains were responsible for extensive crop and property damage with farmlands inundated and 36,000 houses flooded throughout Japan. At least 26 deaths were attributed to the typhoon. Newspaper reports indicate that it was the worst flooding in 10 years for Hokkaido. Several major rivers on the island overflowed their banks leaving towns marooned and isolated.


TYPHOON RITA
BEST TRACK TC-08
18 AUG-23 AUG 1975
MAX SFC WIND 80 KTS
MINIMUM SLP 966 MBS
LEGEND
6 HR BEST TRACK POSITS
A SPEED
B INTENSITY
C POSITION AT XX/0000 Z
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
23/18Z
18/06Z
SEOUL
TOKYO
SHANGHAI
TAIPEI
HONG KONG
MANILA
CHICHI JIMA
IWO JIMA
MARCUS
WAKE
SAIPAN
GUAM
ENIWETOK
YAP
ULITHI

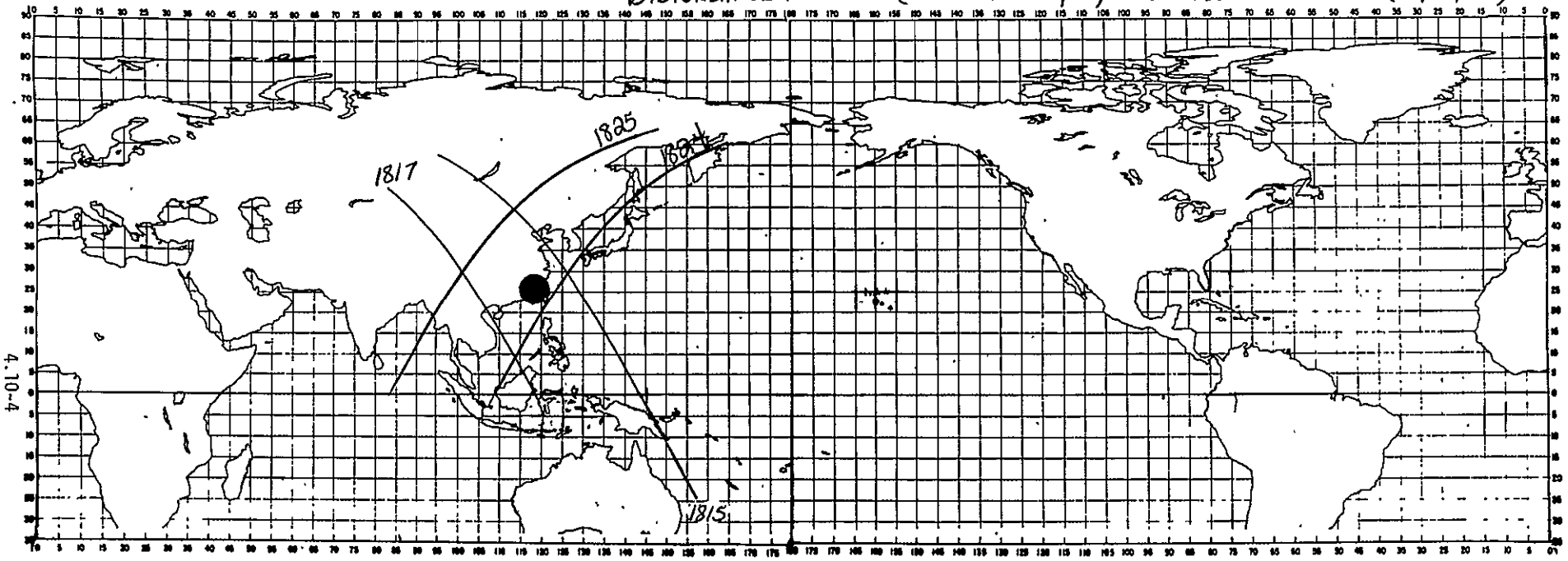
DISTURBANCE: "RITA" TD-08; (WESTERN PACIFIC)

DATE: AUGUST 16 - AUGUST 23, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
8/16	0202Z 1250Z	23.0N 24.0	119.5E 119.5			
8/17	0102Z 1149Z	23.0N *	120.0E *			
8/18	0001Z 1050Z	24.0N 25.0	130.0E 130.0			
8/19	0056Z 1145Z 2357Z	25.0N 25.0 26.3	130.0E 128.8 128.8			
8/20	1046Z	27.0N	130.0E	983.4 (0620Z)	37 (0514Z)	Tropical Storm
8/21	0050Z 1142Z 2350Z	28.0N 30.0 30.1	131.3E 132.0 133.5			
8/22	1043Z	33.2N	133.7E	966.3 (1200Z)	80 (1200Z)	Typhoon
8/23	0042Z	36.0N	135.5E			

*No definite center to classify, but numerous suspect areas within convection 15°N to 25°N between 115°E and 150°E.

DISTURBANCE: "RITA" (Western Pacific) - 0202Z to 1250Z (8/16/75)

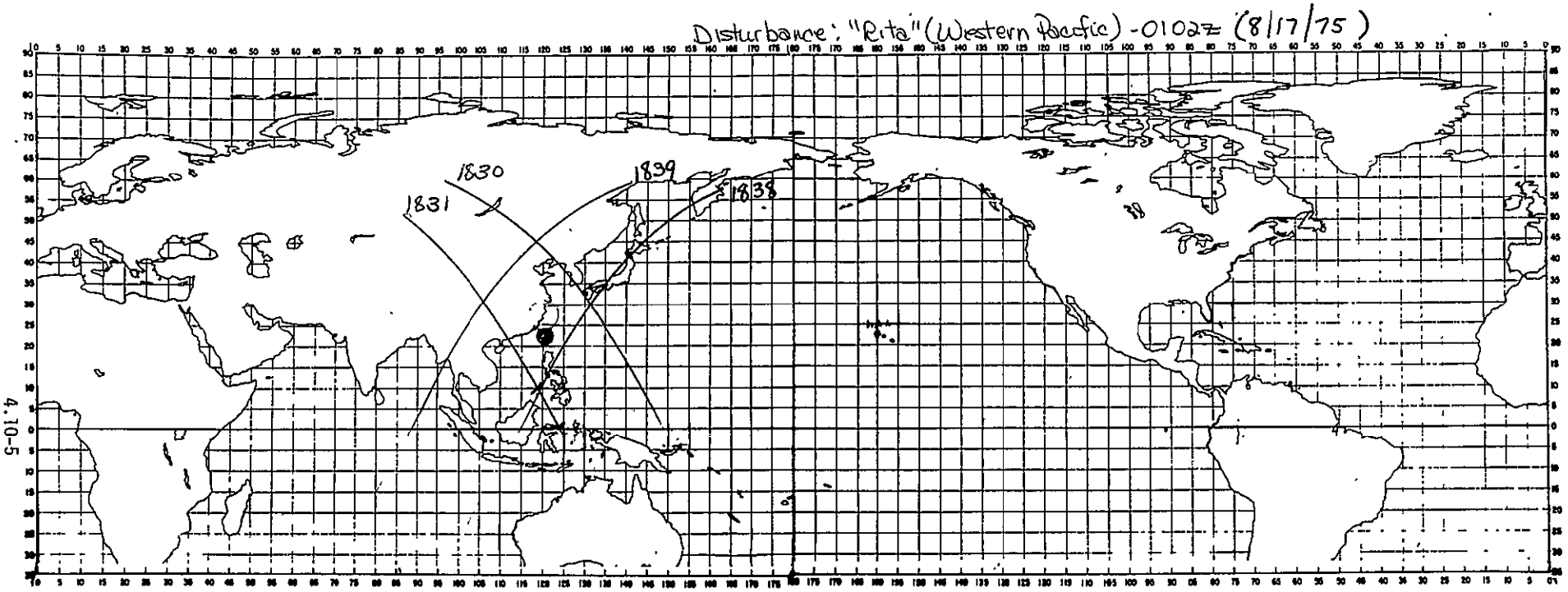


4.10-4

LOCATION

TIME	LATITUDE	LONGITUDE
0202Z	23.0N	119.5E
1250Z	24.0	119.5

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1815	+169.78	06 19 10 Z	08 09 Z	074559	081056	802	170
1817	+119.17	09 42 37 Z	09 49 Z	Do			
1824	-58.09	21 35 08 Z	22 19 Z	221435	222102	802	180
1825	-83.41	23 16 53 Z	23 58 Z	Do			

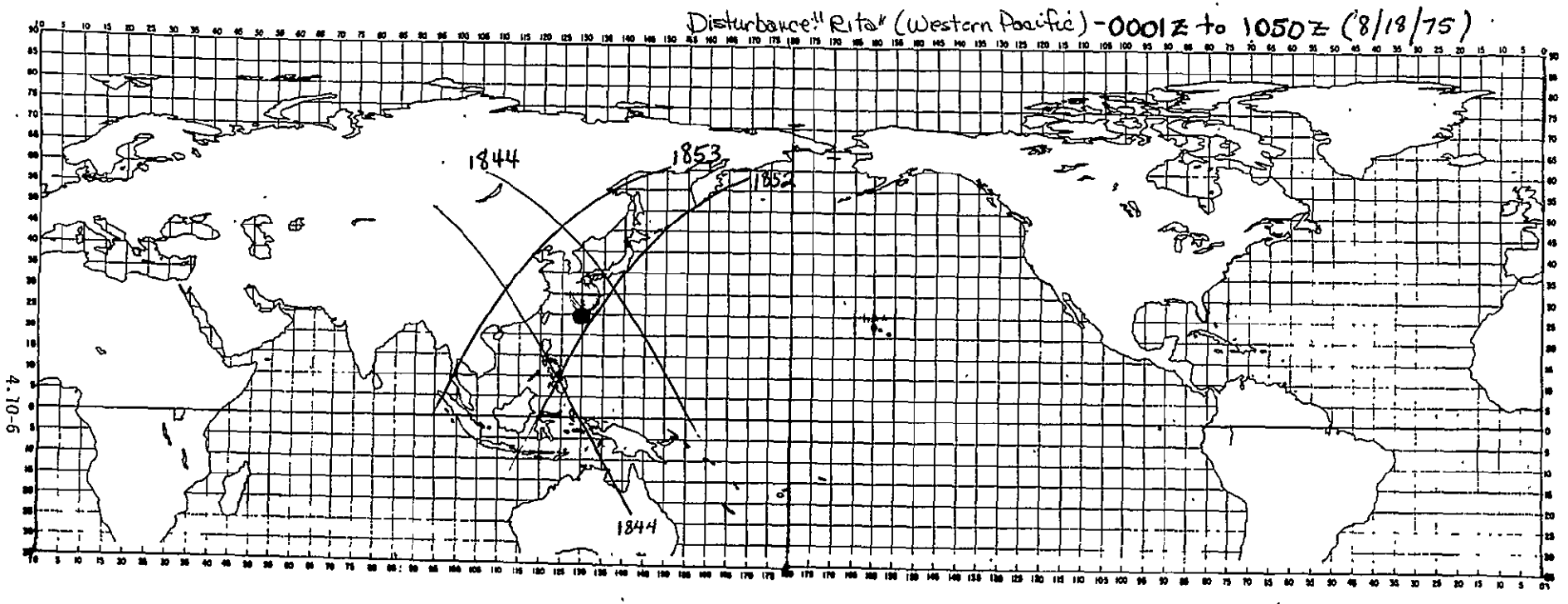


4.10-5

LOCATION

TIME	LATITUDE	LONGITUDE
0102Z	23.0N	120.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1830	+149.97	07 45 49 Z	07 55 Z	No			
1831	+124.65	09 27 36 Z	09 33 Z	No			
1838	- 52.61	21 20 03 Z	22 05 Z	215849	220857	802	193
1839	- 77.93	23 01 52 Z	23 44 Z	No			



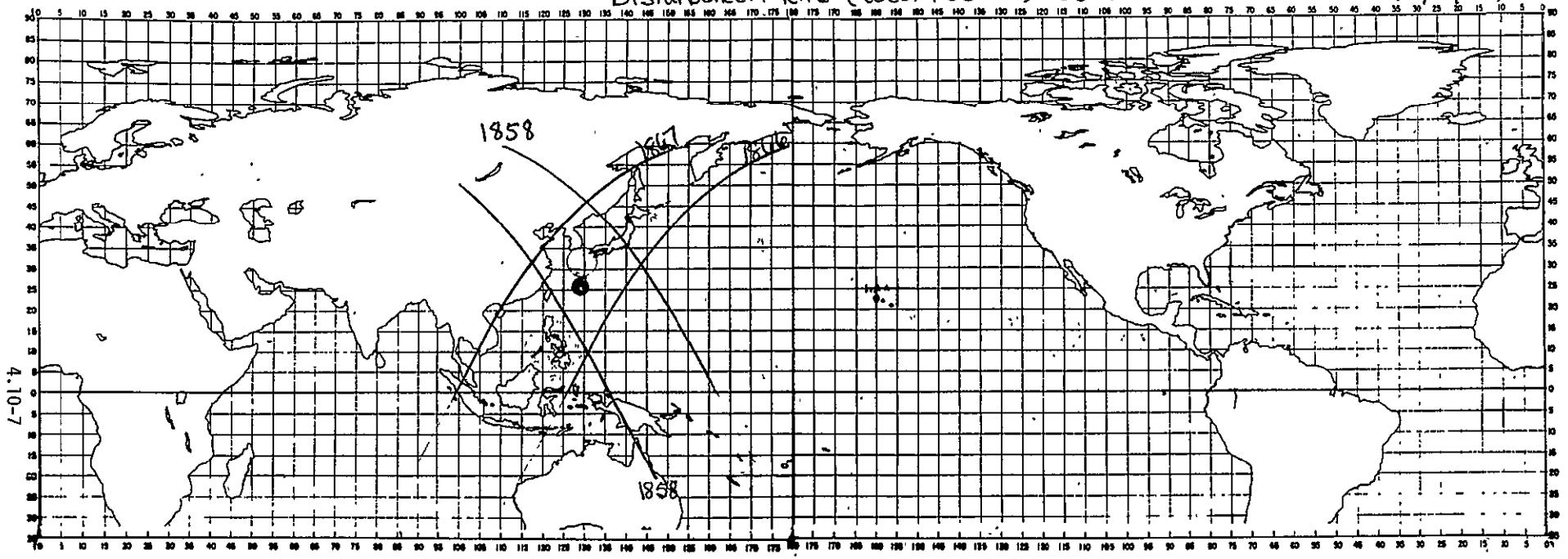
4.10-6

LOCATION

TIME	LATITUDE	LONGITUDE
0001Z	24.0N	130.0E
1050Z	25.0N	130.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1844	+155.45	07 30 48 Z	09 40 Z	No			
1844	+155.45	07 30 48 Z	09 19 Z	090859	091853	802	193
1852	-47.14	21 05 04 Z	21 47 Z	213248	215531	802	199
1853	-72.46	22 46 51 Z	23 28 Z	No			

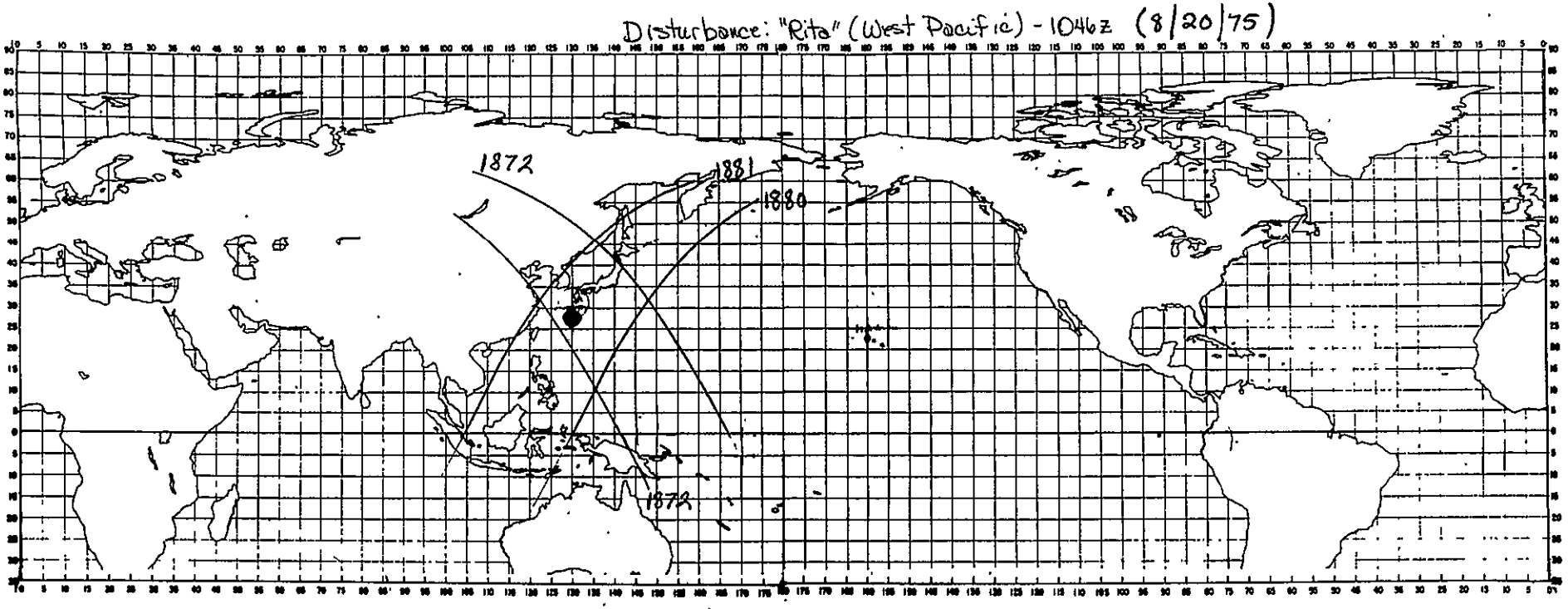
Disturbance: "Rita" (West Pacific) - 0056Z to 1145Z to 2357Z (10/19/75)



LOCATION

TIME	LATITUDE	LONGITUDE
0056Z	25.0N	130.0E
1145Z	25.0N	128.8E
2357Z	26.3N	128.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1858	+160.93	07 15 46 Z	07 26 Z	Do			
1858	+160.93	07 15 46 Z	09 05 Z	085406	090540	802	204
1866	-41.69	20 50 12 Z	21 34 Z	213135	214301	802	210
1867	-67.02	22 31 59 Z	23 15 Z	Do			

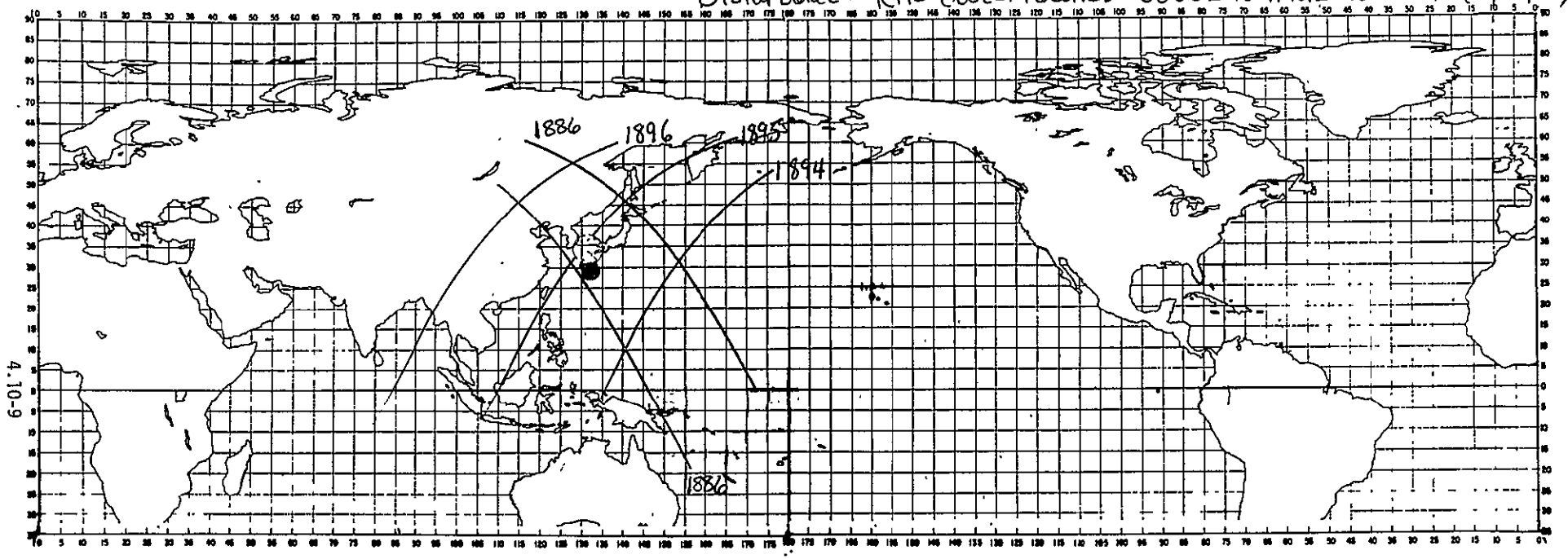


LOCATION

TIME	LATITUDE	LONGITUDE
1046Z	27.0N	130.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1872	+166.36	07 00 55 Z	07 12 Z	No			
1872	+166.36	07 00 55 Z	08 51 Z	082649	085159	802	265
1880	-36.22	20 35 11 Z	21 19 Z	No			
1881	-61.54	22 16 58 Z	22 58 Z	No			

Disturbance: "Rita" (West Pacific) - 0050Z to 1142Z to 2350Z (8/21/75)

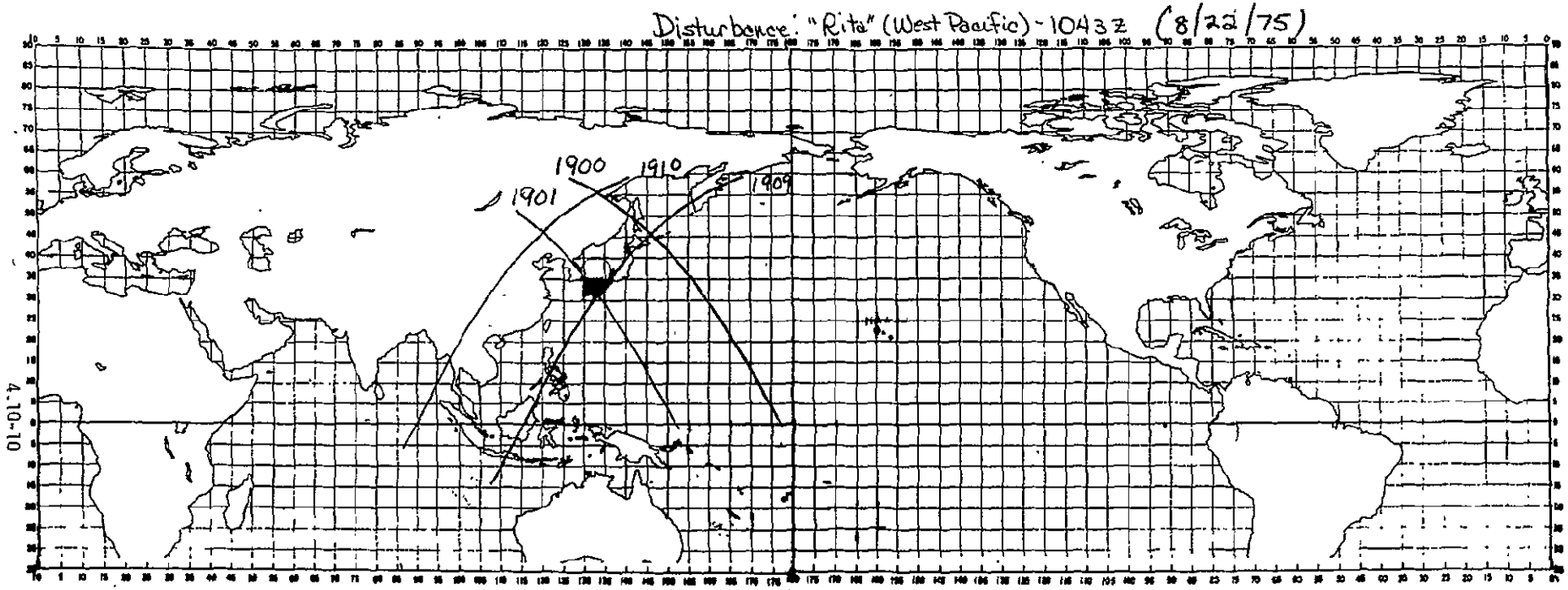


4-10-9

LOCATION

TIME	LATITUDE	LONGITUDE
0050Z	28.0N	131.3E
1142Z	30.0N	132.0E
2350Z	30.1N	133.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1886	+171.84	06 45 54 Z	06 58 Z	No			
1886	+171.84	06 45 54 Z	08 36 Z	081331	083800	802	228
1894	-30.74	20 20 10 Z	21 03 Z	210348	211413	802	233
1895	-55.07	22 01 58 Z	22 43 Z	No			
1896	-81.39	23 43 45 Z	00 20 Z	No			



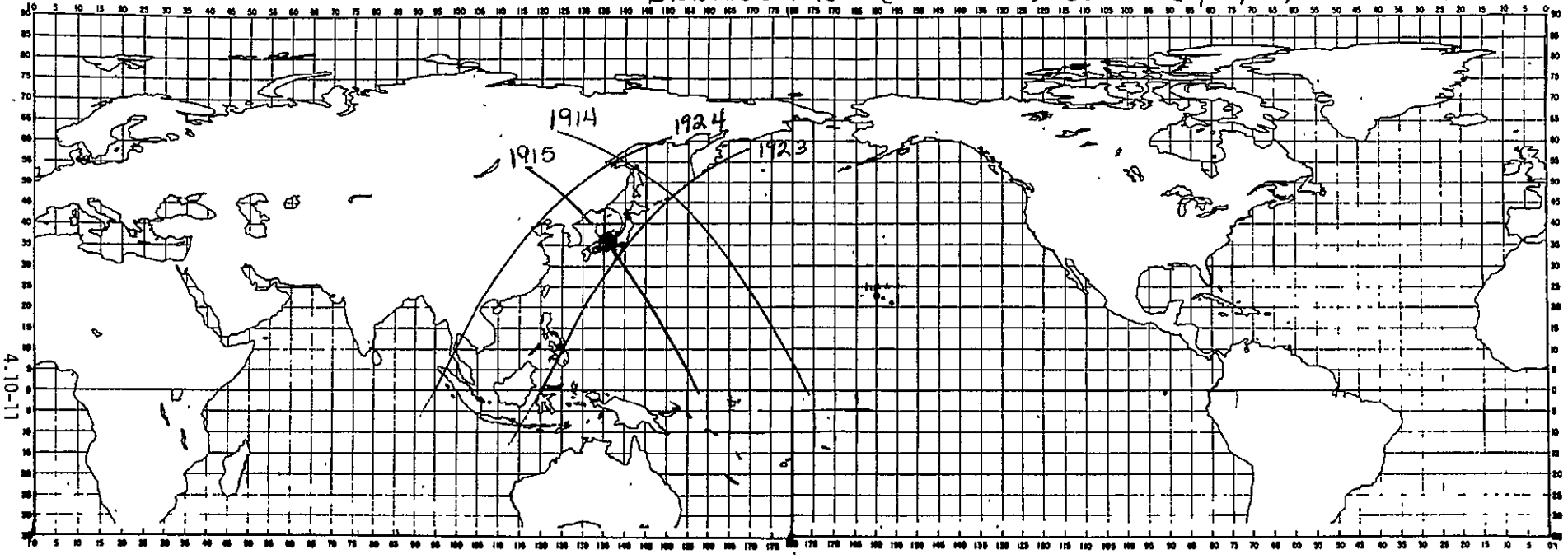
4.10-10

LOCATION

TIME	LATITUDE	LONGITUDE
1043Z	33.2N	133.7E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1900	+177.31	06 30 53 Z	06 45 Z	No			
1901	+151.99	08 12 40 Z	08 23 Z	No			
1909	−50.60	21 46 57 Z	22 28 Z	222702	225606	802	244
1910	−75.92	23 28 44 Z	00 06 Z	No			

Disturbance: "Rita" (West Pacific) - 0042Z (8/23/75)



4-10-11

LOCATION

TIME	LATITUDE	LONGITUDE
0042Z	36.0N	135.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1914	-177.21	05 15 52 Z	05 31 Z	No			
1915	+157.47	07 57 39 Z	08 09 Z	No			
1923	-45.12	21 31 56 Z	22 13 Z	221248	222254	802	256
1924	-70.44	23 13 43 Z	23 50 Z	No			

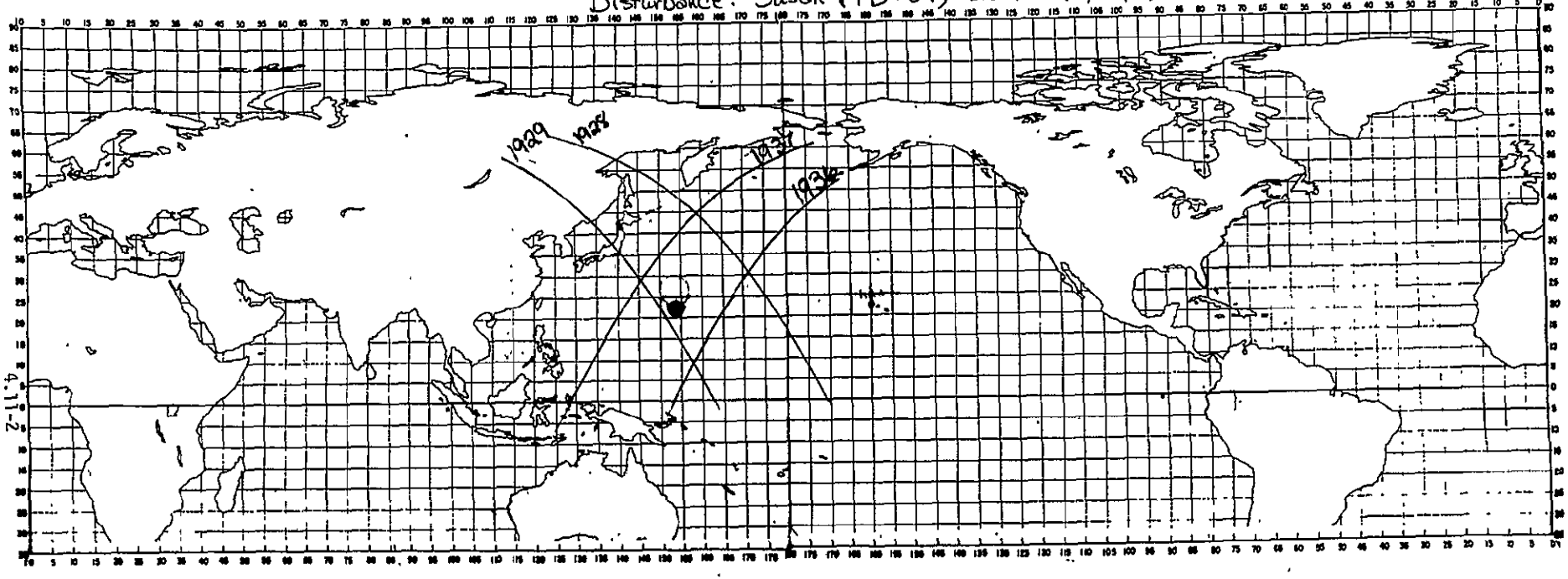
DISTURBANCE: "SUSAN" TD-09;

DATE: AUGUST 24 - SEPTEMBER 1, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
8/24	2247Z	23.0N	154.0E			
8/25	0934Z 2147Z	23.0N 24.0	153.5E 154.0			
8/26	22??Z	27.5N	152.0E			
8/27	0937Z 2334Z	30.0N 31.7	152.0E 151.8			
8/28	1027Z 2234Z	34.0N 34.7	151.5E 152.3			
8/29	0930Z 2326	36.0N 36.3	154.3E 156.8			
8/30	0830Z 2227	37.2N 37.2	157.7E 158.0			
8/31	0936Z 2322Z	39.2N 39.3	158.0E 157.0			
9/1	1070Z 2222Z	40.7N 41.0	156.2E 156.0			

NOTE: See track map, page 4.1-7.

Disturbance: "Susan" (TD #09) - 2247Z (8/24/70)

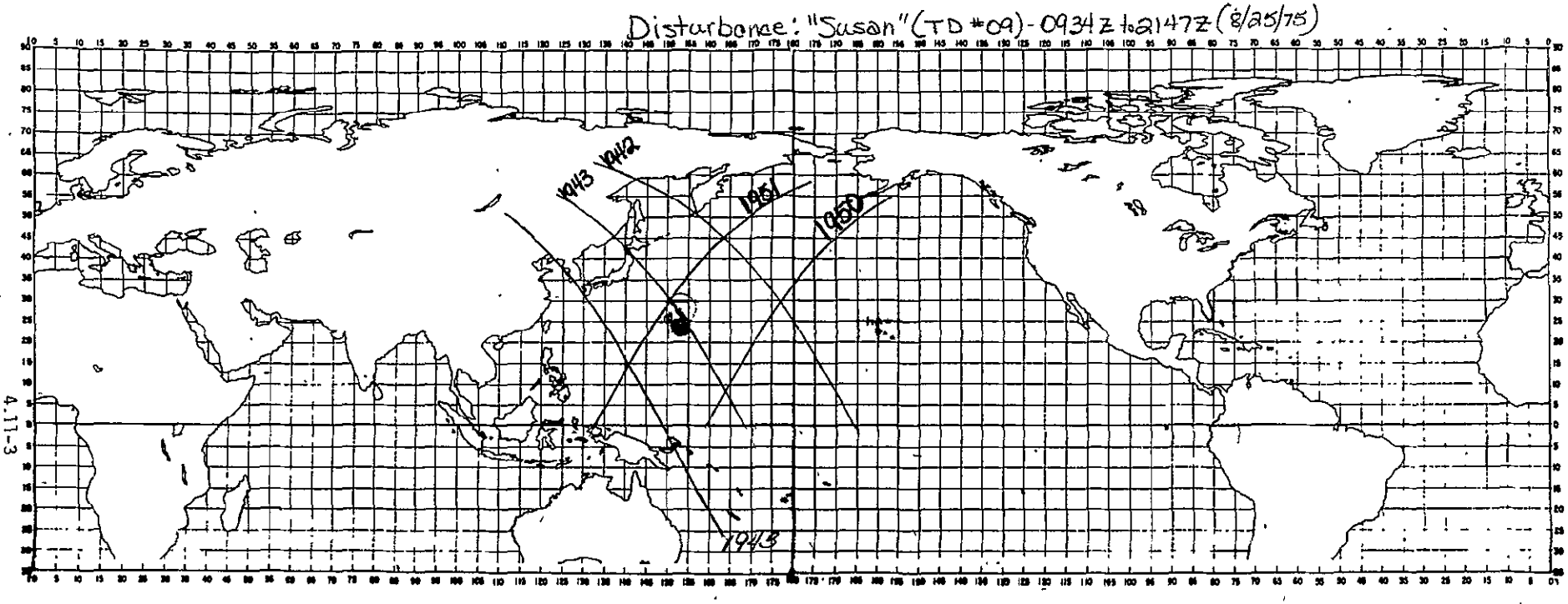


4.11-2

LOCATION

TIME	LATITUDE	LONGITUDE
2247Z	23.0N	154.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1928	-171.74	05 00 52 Z	0511 Z	Do			
1929	168.94	07 42 39 Z	07 49 Z	Do			
1936	-14.32	19 35 06 Z	20 21 Z	202330	202842	802	264
1937	-39.64	21 16 55 Z	21 59 Z	215841	220922	802	264



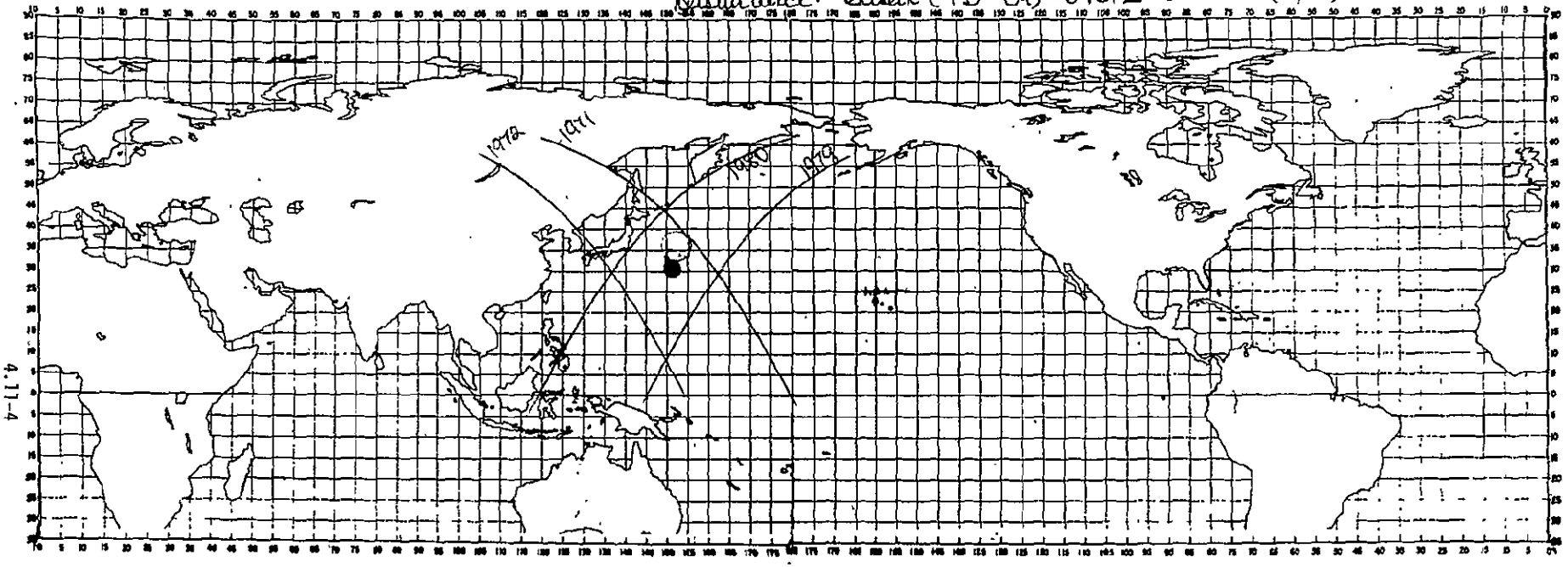
4.11-3

LOCATION

TIME	LATITUDE	LONGITUDE
0934Z	23.0N	153.5E
2147Z	24.0N	159.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1942	-166.26	05 46 51 Z	05 58 Z	No			
1943	168.41	07 27 38 Z	07 35 Z	No			
1943	168.41	07 27 38 Z	09 14 Z	085414	091905	802	26.5
1950	-8.85	19 20 08 Z	20 06 Z	No			
1951	-34.17	21 01 55 Z	21 45 Z	No			

Disturbance: "Susan" (TD# 09) - 0937Z to 2334Z (8/27/75)

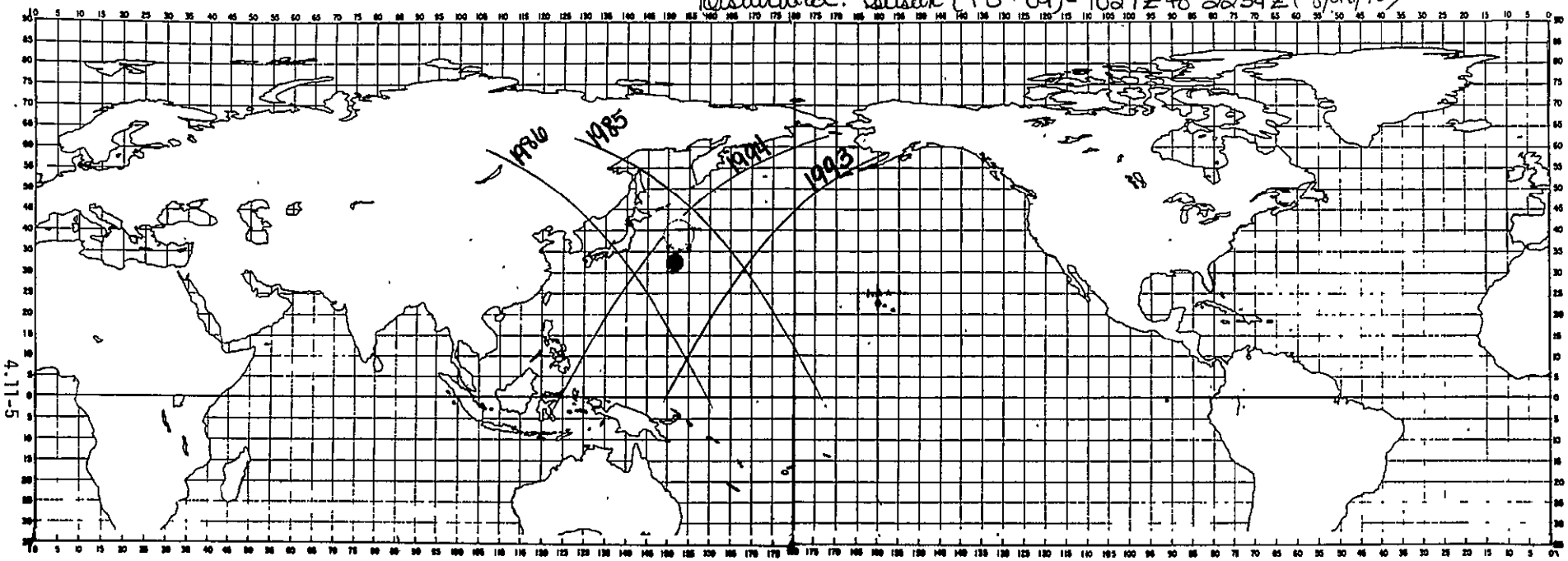


LOCATION

TIME	LATITUDE	LONGITUDE
0937Z	30.0N	152.0E
2334Z	31.7N	151.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1971	179.37	06 57 36 Z	07 09 Z	Do			
1972	154.04	08 38 24 Z	08 46 Z	Do			
1979	-23.22	20 31 53 Z	21 15 Z	211745	212752	802	298
1980	-48.54	22 13 41 Z	22 54 Z	225403	230331	802	300

Disturbance: "Susan" (TD*09) - 1027Z to 2234Z (8/28/75)



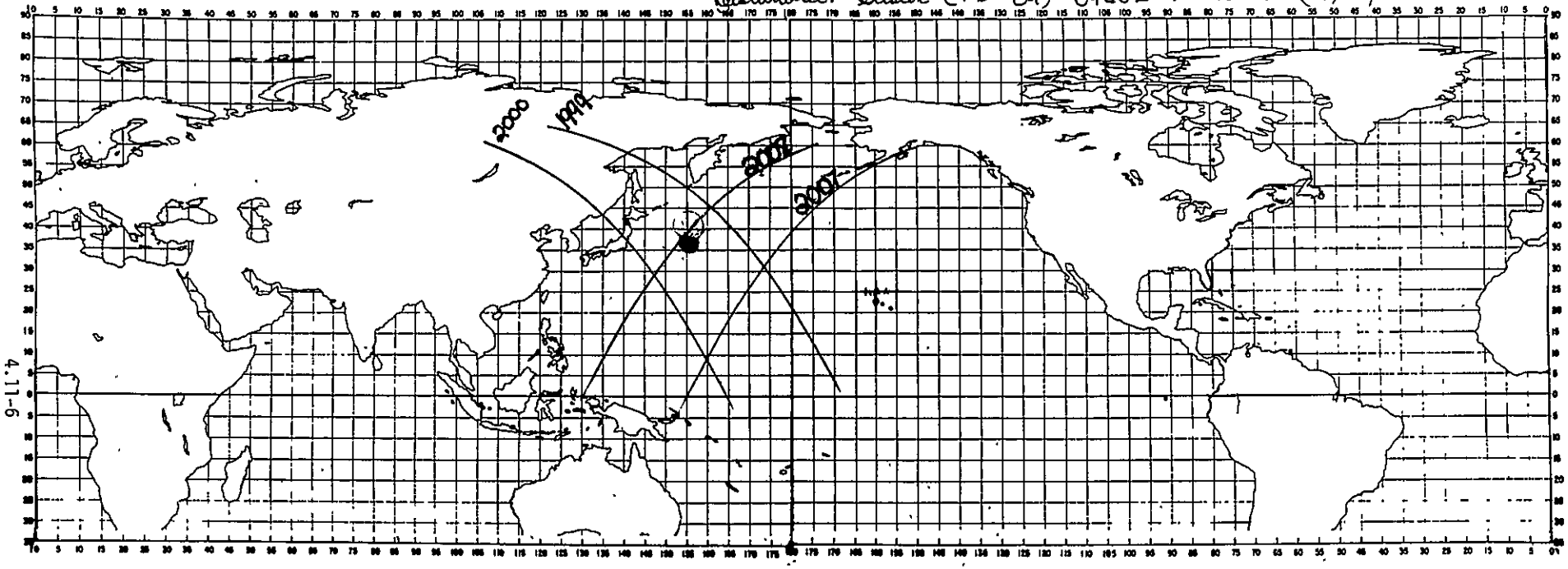
4.11-5

LOCATION

TIME	LATITUDE	LONGITUDE
1027Z	30.0N	151.5E
2234Z	34.7N	152.3E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1985	-175.16	06 42 36 Z	0656 Z	Do			
1986	159.62	08 24 23 Z	0832 Z	Do			
1993	-17.75	20 16 53 Z	21 00 Z	204814	211040	802	307
1994	-43.07	21 58 40 Z	22 39 Z	223952	225048	802	309

Disturbance: "Susan" (TD #09) - 0930Z to 2326Z (8/29/75)



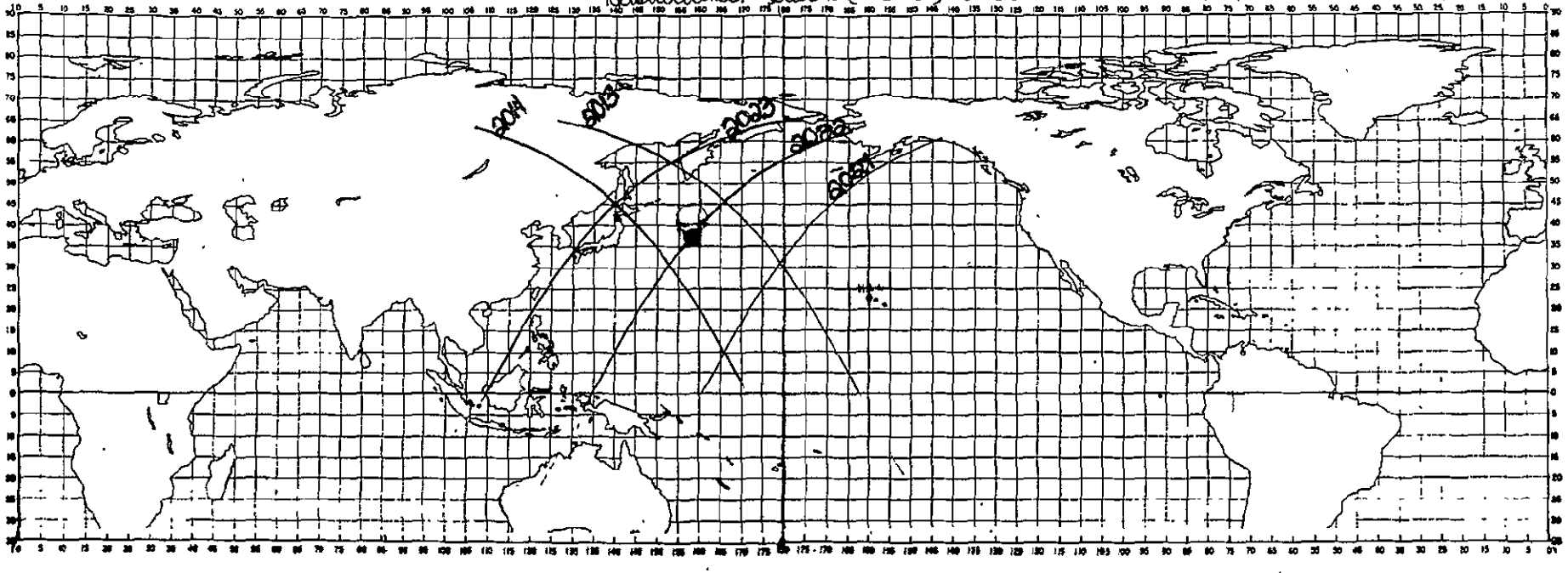
4.11-6

LOCATION

TIME	LATITUDE	LONGITUDE
0930Z	36.0N	154.3E
2326Z	36.3N	156.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
1999	-169.68	-06 27 35 Z	06 41 Z	No			
2000	164.99	08 09 22 Z	08 18 Z	No			
2007	-12.27	20 01 52 Z	20 44 Z	204001	205633	802	317
2008	-37.59	21 43 39 Z	22 23 Z	221308	223637	802	319

Disturbance: "Jusar" (TD #09) - 0830Z to 2227Z (8/20/75)



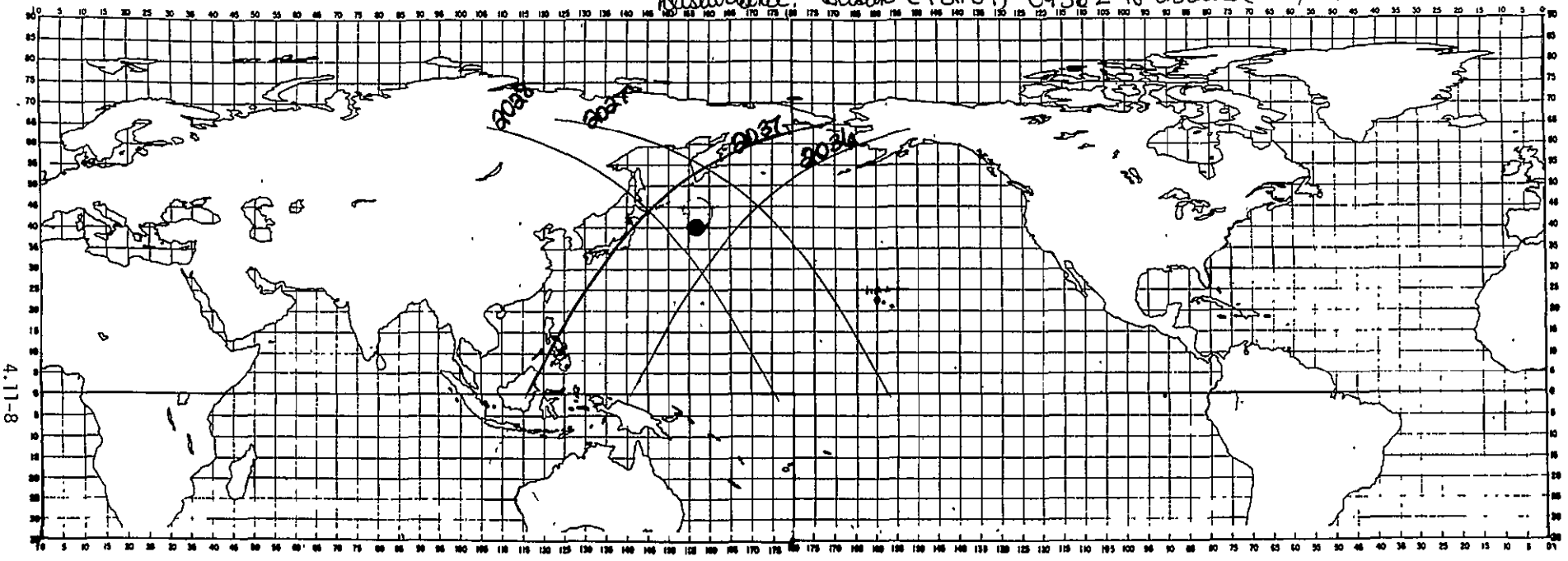
4.11-7

LOCATION

TIME	LATITUDE	LONGITUDE
0830Z	37.2N	157.7E
2227Z	37.2N	158.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIT.#
2013	-164.21	06 12 35 Z	06 29 Z	No			
2014	170.48	07 54 22 Z	08 04 Z	No			
2021	-6.79	19 46 51 Z	20 29 Z	No			
2022	-32.12	21 28 38 Z	22 08 Z	No			
2023	-57.24	23 10 25 Z	23 45 Z	233718	235546	708	331

Disturbance: "Susan" (TD#09) - 0936 Z to 2322 Z (8/31/75)

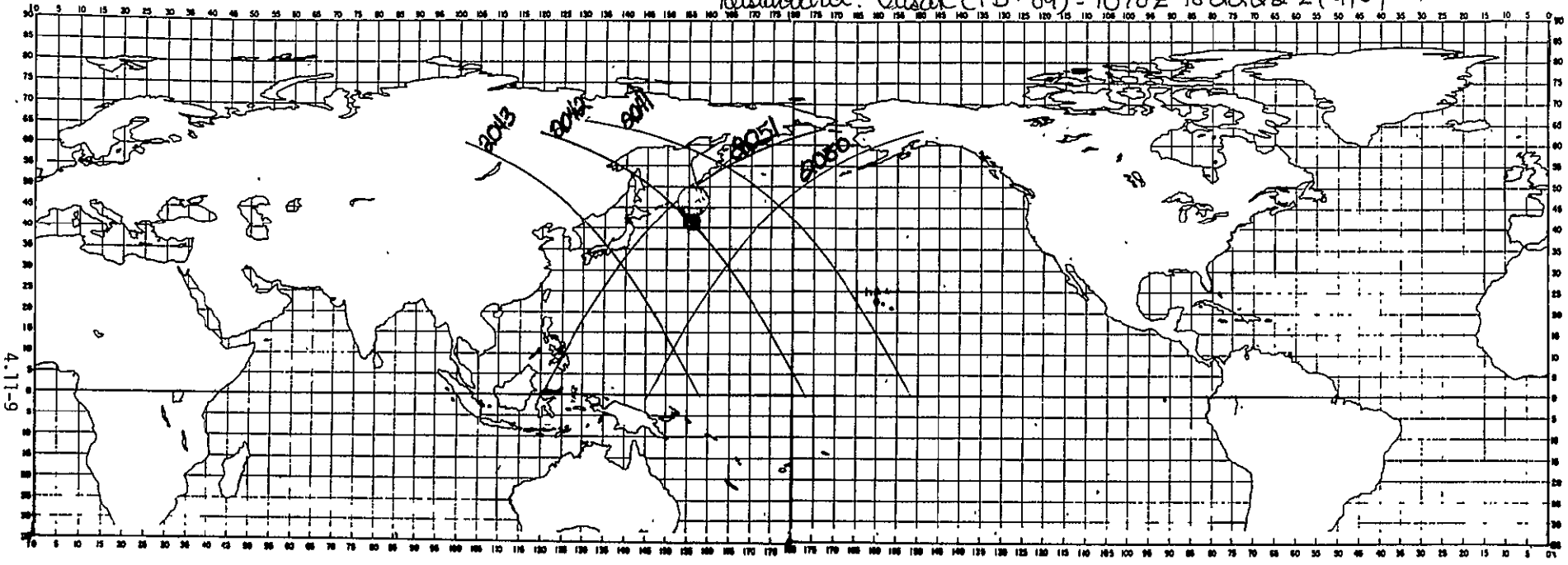


4.11-8

LOCATION

TIME	LATITUDE	LONGITUDE
0936Z	39.2N	158.0E
2322Z	39.3N	157.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
8087	-158.74	05 57 31 Z	06 14 Z	No			
8028	175.94	07 39 21 Z	07 51 Z	No			
8036	-26.85	21 13 03 Z	21 52 Z	No			
8037	-51.07	22 55 26 Z	23 31 Z	233523	234404	862	337



4.11-9

LOCATION

TIME	LATITUDE	LONGITUDE
1070Z	40.7N	156.2E
~~2222Z~~	41.0N	156.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
8041	-153.38	05 42 33 Z	06 01 Z	No			
8042	-178.53	07 24 20 Z	07 37 Z	No			
8043	156.09	09 06 07 Z	09 16 Z	No			
8050	-21.17	20 58 37 Z	21 39 Z	No			
8051	-48.49	22 40 24 Z	23 16 Z	230758	233058	802	349

TYPHOON TESS

(August 31 - September 9, 1975)

Meteorological History/Data

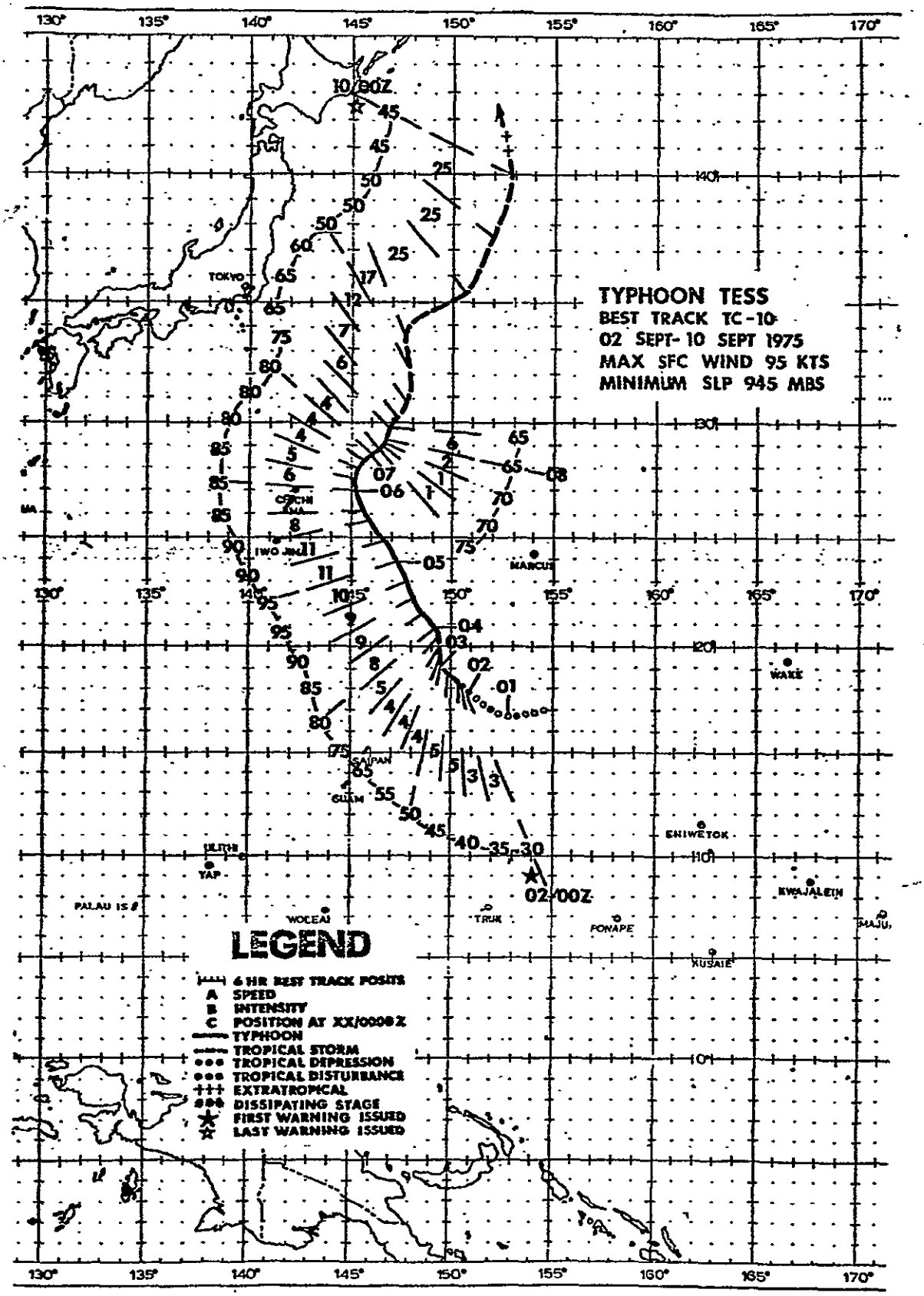
Satellite data on the evening of 31 August first showed preliminary upper-level features indicative of a formative outflow pattern. Divergent flow on the southern side of the persistent tropical upper tropospheric trough was enhancing the tropical cyclone formation process and a closed surface circulation was analyzed in the same area the following morning, 600 nm east-northeast of Saipan. Midtropospheric ridging from Japan to the Dateline initially caused Tess' embryo to drift west-southwest. As this ridge weakened, the system began tracking west-northwest, developing slowly. As the trough migrated toward the north, an anticyclone was established over the surface circulation, which was now located 280 nm east of Pagan Island in the northern Mariana Islands.

The first warning on Tess was issued on the morning of 2 September after reconnaissance aircraft and satellite data indicated rapid development. Tess was upgraded to a typhoon on the 3rd at 1200Z when reconnaissance aircraft reported surface winds of 75 knots approximately 250 nm west of the Maug Islands. The typhoon was now moving in a more northerly direction toward a weakness in the collapsing midtropospheric ridge to the north. Thirty hours later on the 4th at 1800Z, Tess reached a minimum central pressure of 945 mb and maximum sustained surface winds of 95 knots.

Tropical Storm Viola had formed approximately 1200 nm southwest of Tess on the 4th and subsequently moved within 900 nm of Tess before dissipating on the 7th. Viola's presence helps explain Tess' reduced speed of movement and irregular track during this period. On the 7th at 0000Z, the SS OREGON reported estimated surface winds of 65 knots while 60 nm east-southeast of the storm's center. Tess maintained typhoon intensity until the 8th at 1800Z, when it moved into a hostile environment of colder water and began interacting with an approaching frontal system. Satellite data indicated that the typhoon was becoming extratropical, and by the morning of the 10th Tess had merged into the frontal system.

Damage Estimates

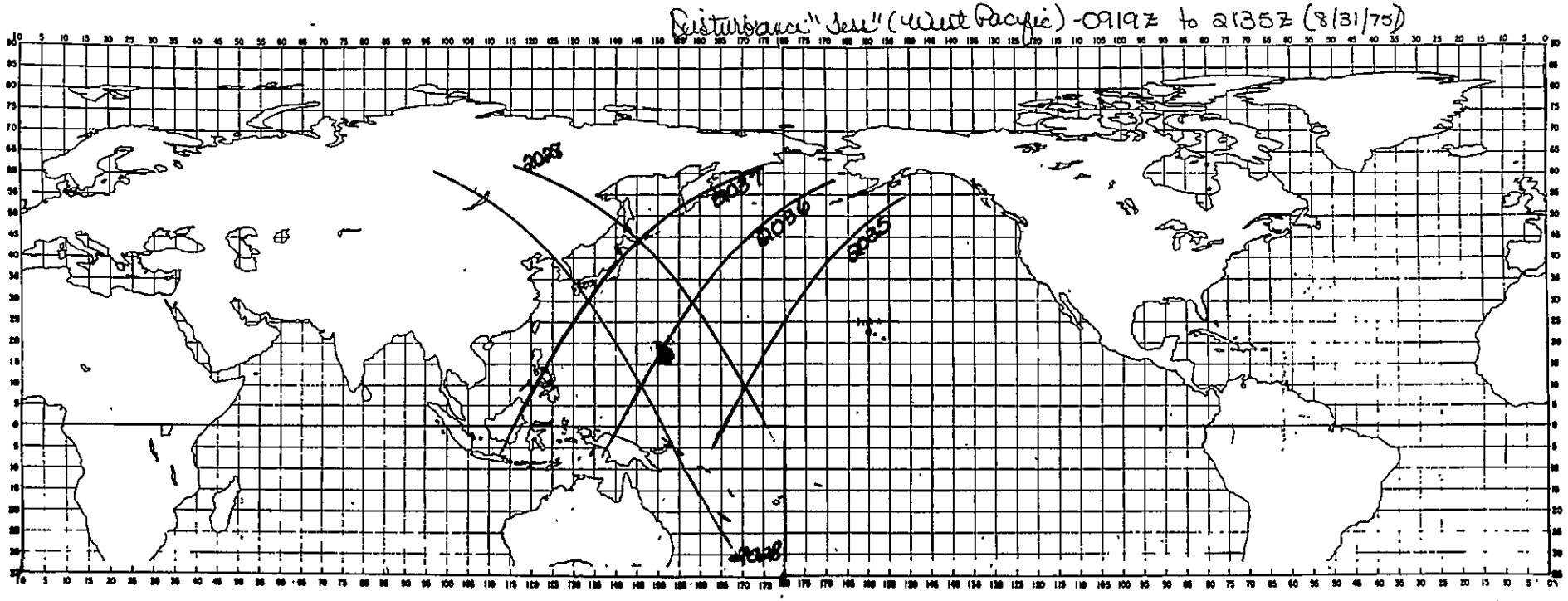
The entire life time of Tess was spent between 153E and 145E, an area of the western North Pacific having few populated islands. This system did little if any damage during its ten day lifespan.


TYPHOON TESS
BEST TRACK TC-10
02 SEPT- 10 SEPT 1975
MAX SFC WIND 95 KTS
MINIMUM SLP 945 MBS
10/90Z
02/00Z
TOKYO
IWO JIMA
MARCUS
WAKE
SAIPAN
GUAM
YAP
ULITHI
WOLEAI
PALAU IS
TRUK
PONAPE
ENIWETOK
KUSAIE
KWAJALEIN
MAJURO
LEGEND
6 HR BEST TRACK POSITS
A SPEED
B INTENSITY
C POSITION AT XX/0000Z
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED

DISTURBANCE: "TESS" TD-10: (WESTERN PACIFIC)

DATE: AUG 31 - SEPT 9, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
8/31	0919Z 2135Z	18.5N 16.9	153.2E 153.1			
9/1	1013Z 2229Z	17.0N 17.8	151.4E 150.4			
9/2	1108Z 2323Z	19.0N 19.0	150.0E 149.0			
9/3	1009Z 2223Z	19.5N 20.0	149.2E 148.8		75	Typhoon (upgraded at 1200Z)
9/4	1105Z 2317Z	22.5N 23.9	148.0E 146.9	945 (1800Z)	95 (1800Z)	Typhoon
9/5	1006Z 2216	25.7N 26.5	146.8E 146.0			
9/6	1102Z 2310Z	28.1N 28.3	145.1E 145.2			
9/7	1002Z	29.0N	146.3E		65 (0000Z)	Typhoon
9/8	0005Z 1057Z 2305Z	28.7N 30.3 30.8	146.3E 147.6 148.0			Became extratropical at 1800Z)
9/9	0959Z 2356Z	34.2N 39.0 (No Convection)	150.0E 153.2			

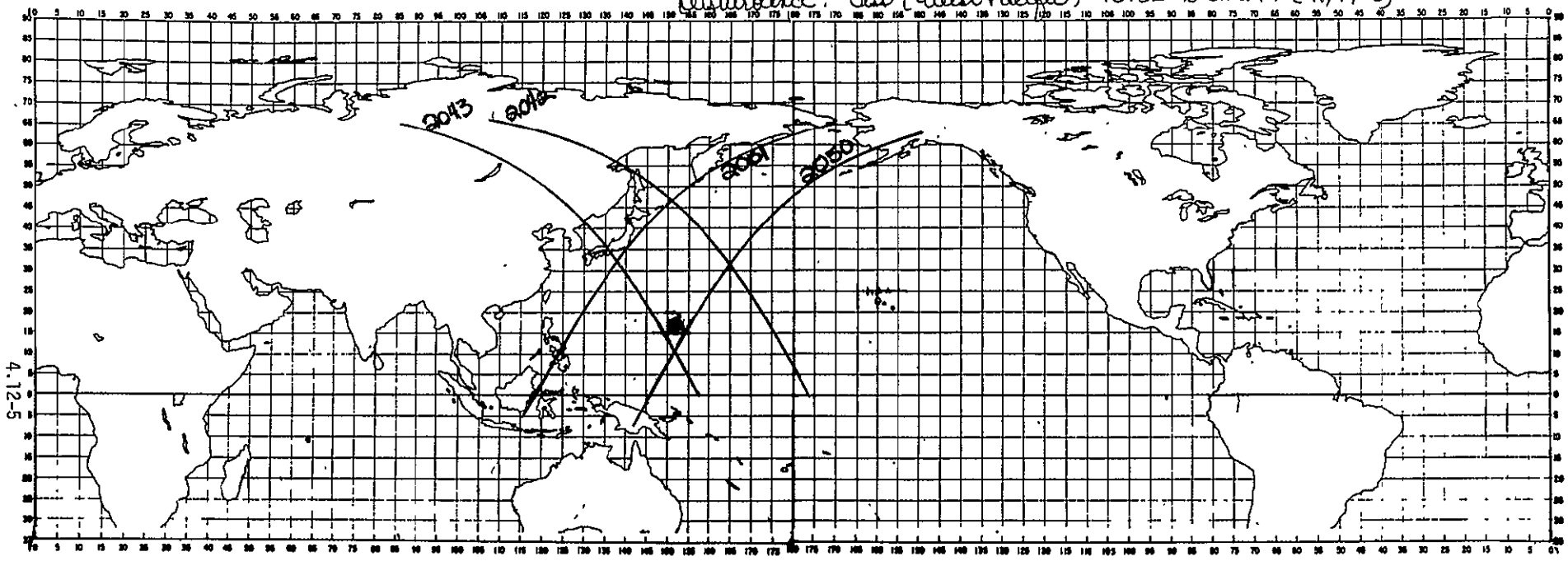


LOCATION

TIME	LATITUDE	LONGITUDE
0919Z	18.5N	153.2E
2135Z	16.9N	153.1E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2028	175.94	07 39 21 Z	07 46 Z	No			
2028	175.94	07 39 21 Z	09 26 Z	090025	093106	802	332
2035	-1.32	19 31 51 Z	20 20 Z	No			
2036	-26.65	21 13 03 Z	21 58 Z	No			
2037	-51.07	22 56 25 Z	23 39 Z	233523	234404	802	337

Disturbance: "Jeff" (West Pacific) - 10132 to 2229 Z (9/1/75)

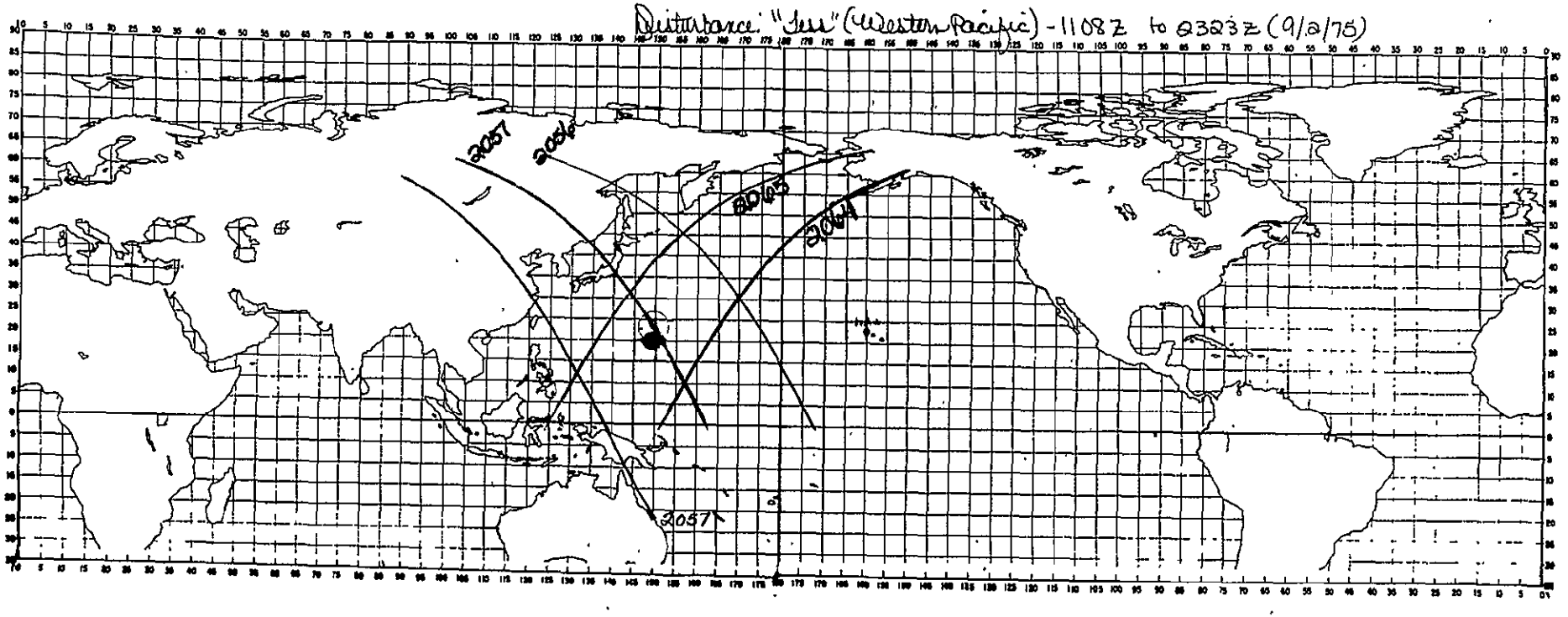


4.12-5

LOCATION

TIME	LATITUDE	LONGITUDE
1013Z	17.0N	151AE
~~2229Z~~	17.8N	160AE

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2042	-178.58	07 24 20 Z	07 32 Z	No			
2043	158.09	09 06 07 Z	09 11 Z	No			
2050	-21.17	20 58 37 Z	21 45 Z	No			
2051	-48.49	22 40 24 Z	23 24 Z	232103	233054	802	349



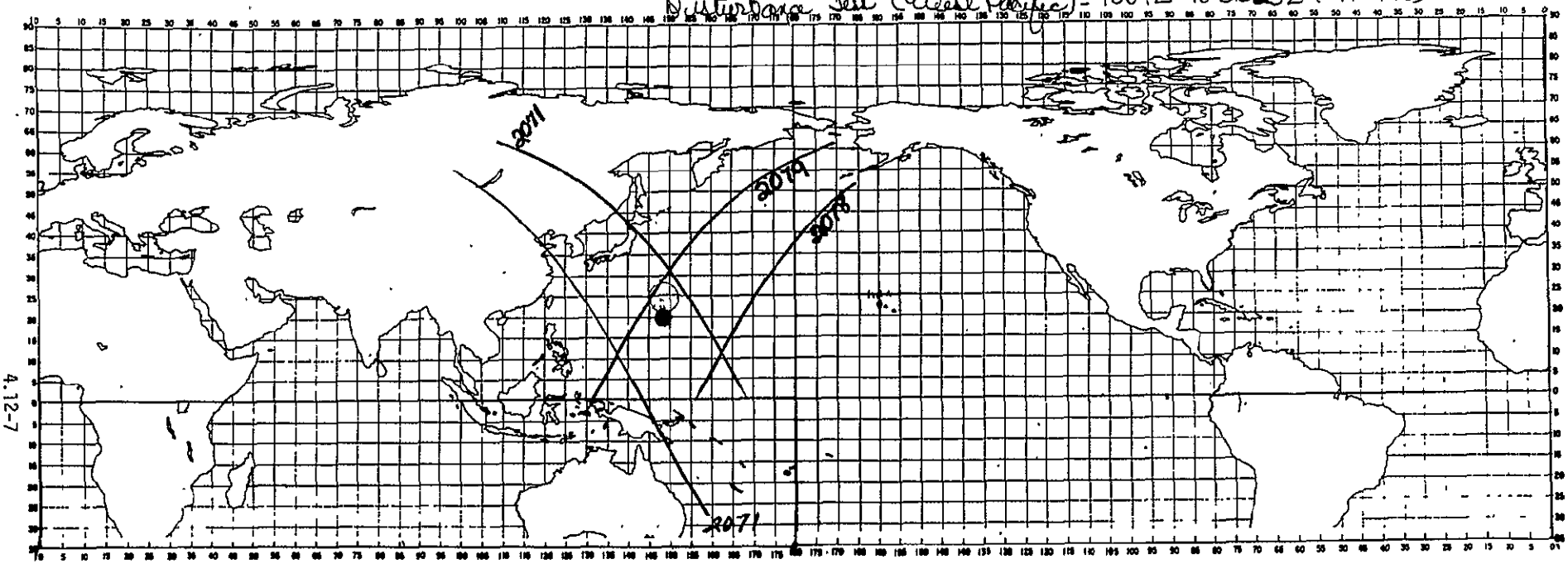
4.12-6

LOCATION

TIME	LATITUDE	LONGITUDE
1108Z	19.0N	150.0E
2323Z	19.0N	149.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2056	173.11	07 09 19 Z	07 17 Z	Do			
2057	161.56	08 51 07 Z	08 57 Z	Do			
2057	161.56	08 51 07 Z	10 37 Z	101604	104102	802	351
2064	-15.70	20 43 38 Z	21 30 Z	Do			
2065	-41.02	22 25 23 Z	23 08 Z	230455	231723	802	360

Disturbance "Jess" (West Pacific) - 1009Z to 2223Z (9/3/75)

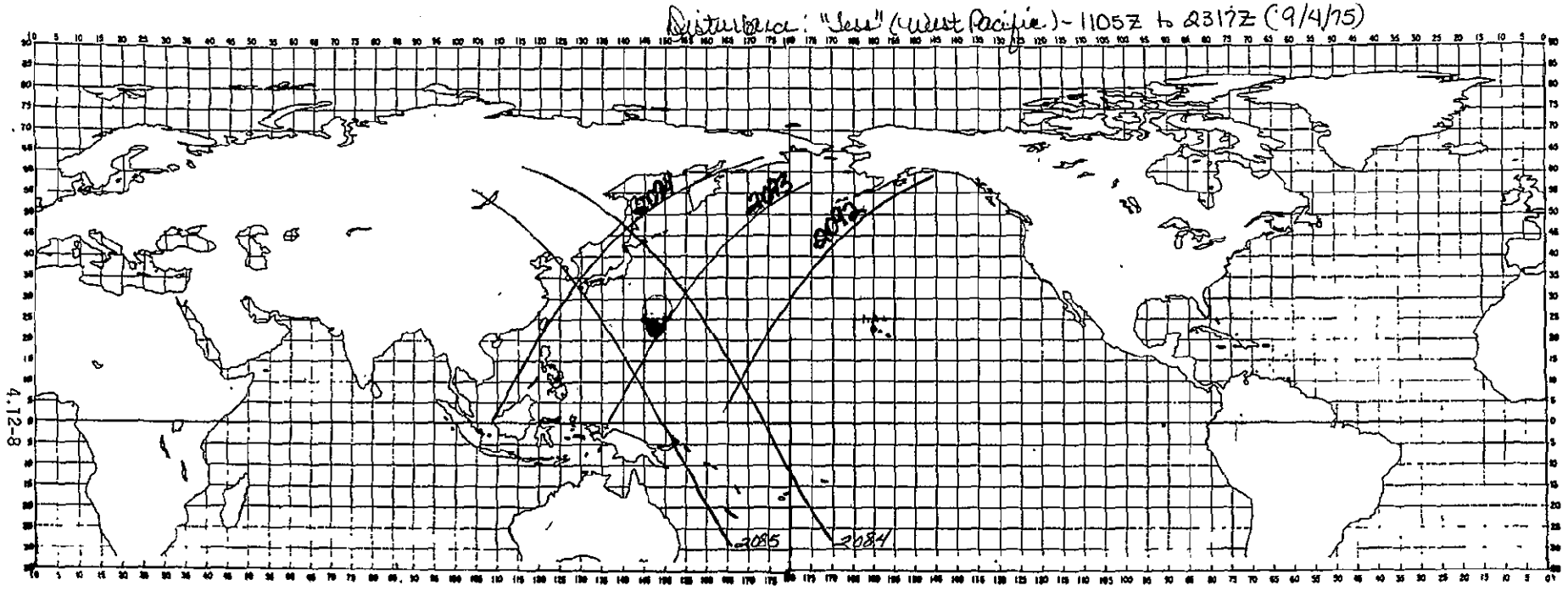


4.12-7

LOCATION

TIME	LATITUDE	LONGITUDE
1009Z	19.5N	149.2E
2223Z	20.0N	148.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2071	167.04	08 34 06 Z	08 41 Z	No			
2071	167.04	08 34 06 Z	10 23 Z	095600	103719	803	364
2078	-10.22	20 23 35 Z	21 10 Z	211858	212329	803	369
2079	-35.55	22 10 23 Z	22 54 Z	No			

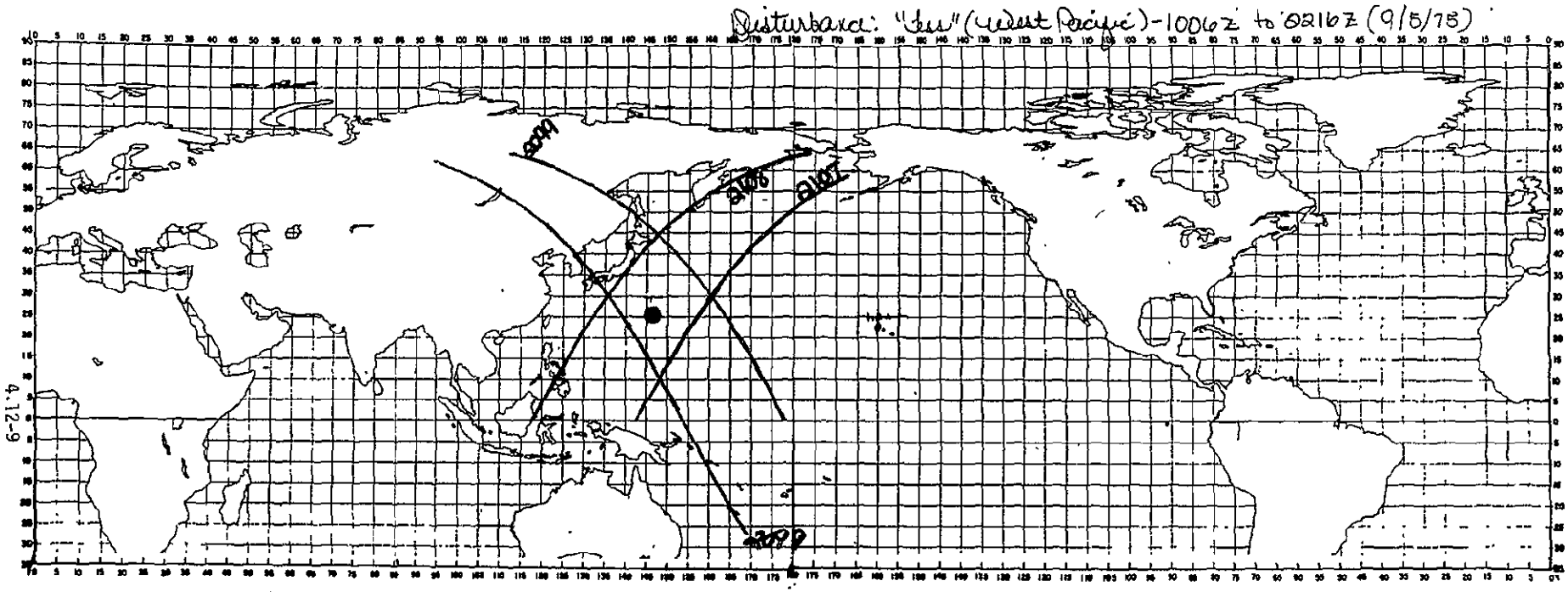


4.12-8

LOCATION

TIME	LATITUDE	LONGITUDE
1105Z	23.5N	148.0E
2317Z	23.9N	146.9E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2084	-162.16	06 39 18 Z	09 30 Z	080443	083617	802	374
2085	172.52	08 21 05 Z	10 09 Z	094141	101919	802	375
2092	-4.75	20 13 35 Z	21 00 Z	No			
2093	-30.07	21 53 22 Z	22 36 Z	No			
2094	-59.40	23 37 09 Z	00 18 Z	001640	002422	802	383

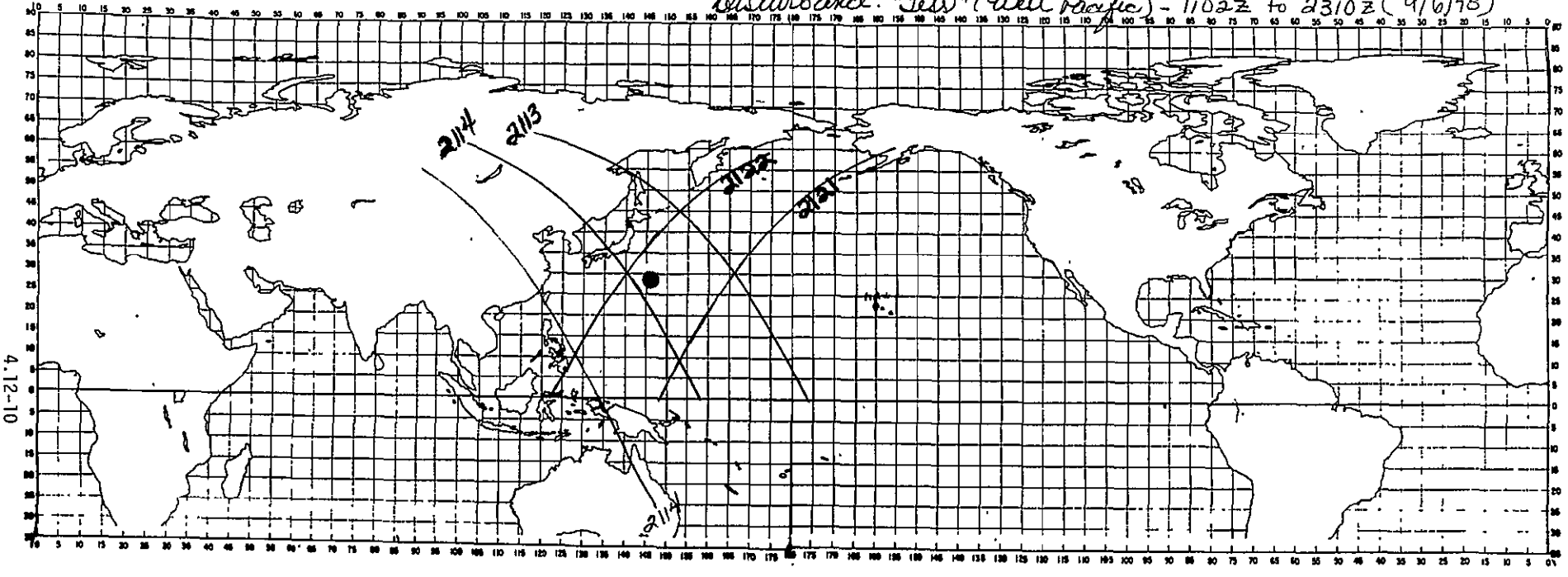


LOCATION

TIME	LATITUDE	LONGITUDE
1006Z	26.7N	146.9E
0216Z	31.5N	146.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
8099	177.99	08 06 04 Z	08 16 Z	No			
2099	177.99	08 06 04 Z	09 55 Z	092737	095901	802	385
8107	-24.60	21 46 21 Z	22 24 Z	No			
8108	-49.92	23 22 08 Z	00 04 Z	000221	001131	802	393

Disturbance: "Jess" (West Pacific) - 1102Z to 2310Z (9/6/78)



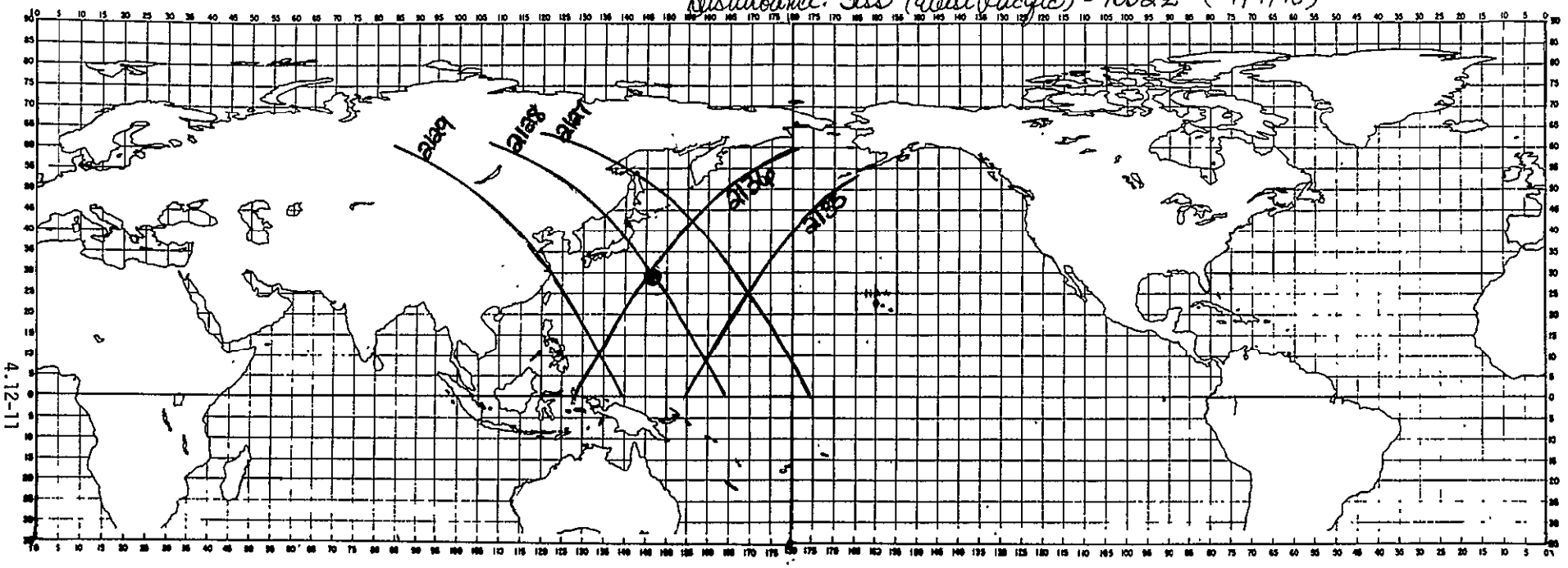
4.12-10

LOCATION

TIME	LATITUDE	LONGITUDE
1102Z	28.1N	145.1E
2310Z	28.3N	146.2E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2113	-176.55	07 51 03 Z	08 03 Z	Do			
2114	158.14	09 32 51 Z	09 40 Z	Do			
2131	-19.12	21 25 20 Z	22 09 Z	Do			
2132	-44.49	23 07 07 Z	23 18 Z	234808	235813	802	465

Disturbance: "Issa" (west Pacific) - 1002Z (9/7/16)



4.12-11

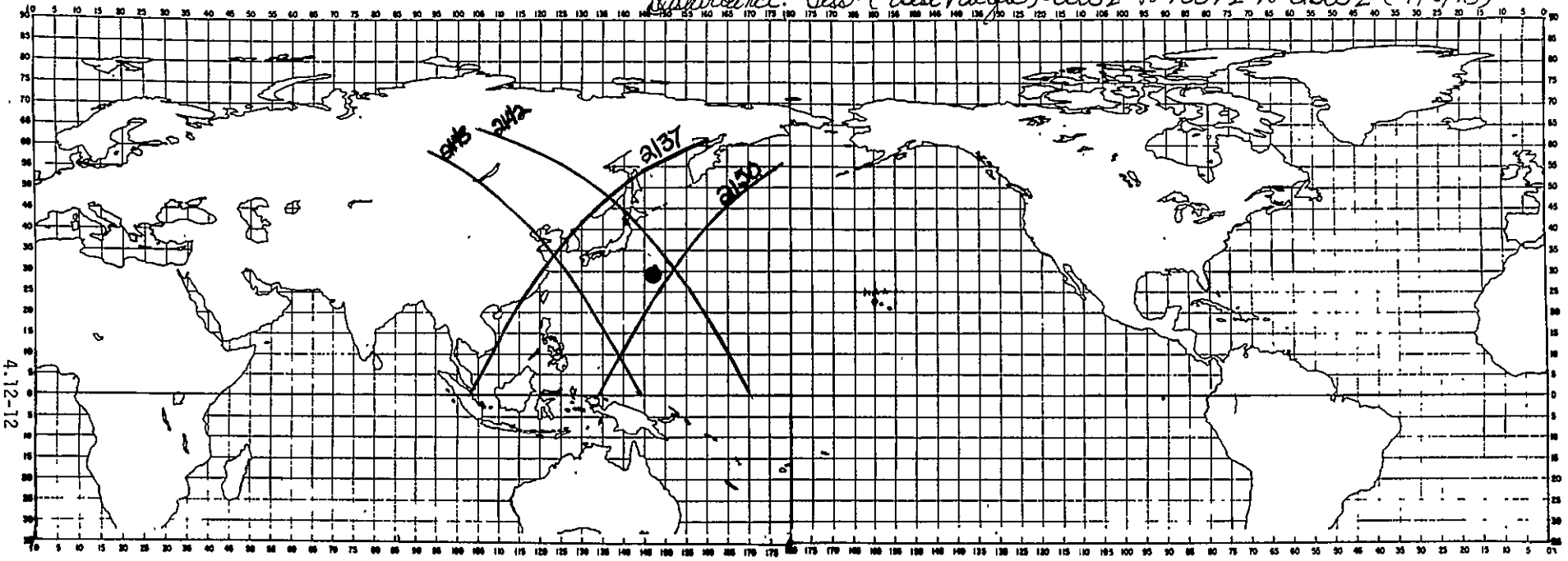
LOCATION

TIME	LATITUDE	LONGITUDE
1002Z	29.0N	146.3E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2127	-171.06	07 36 03 Z	07 18 Z	No			
2128	163.61	09 17 50 Z	09 27 Z	No			
2129	158.29	10 53 37 Z	11 00 Z	No			
2135	-13.65	21 10 20 Z	21 54 Z	No			
2136	-38.97	22 52 07 Z	23 34 Z	No			

22

Disturbance: "Jess" (West Pacific) - 0005Z to 1057Z to 2305Z (9/8/75)



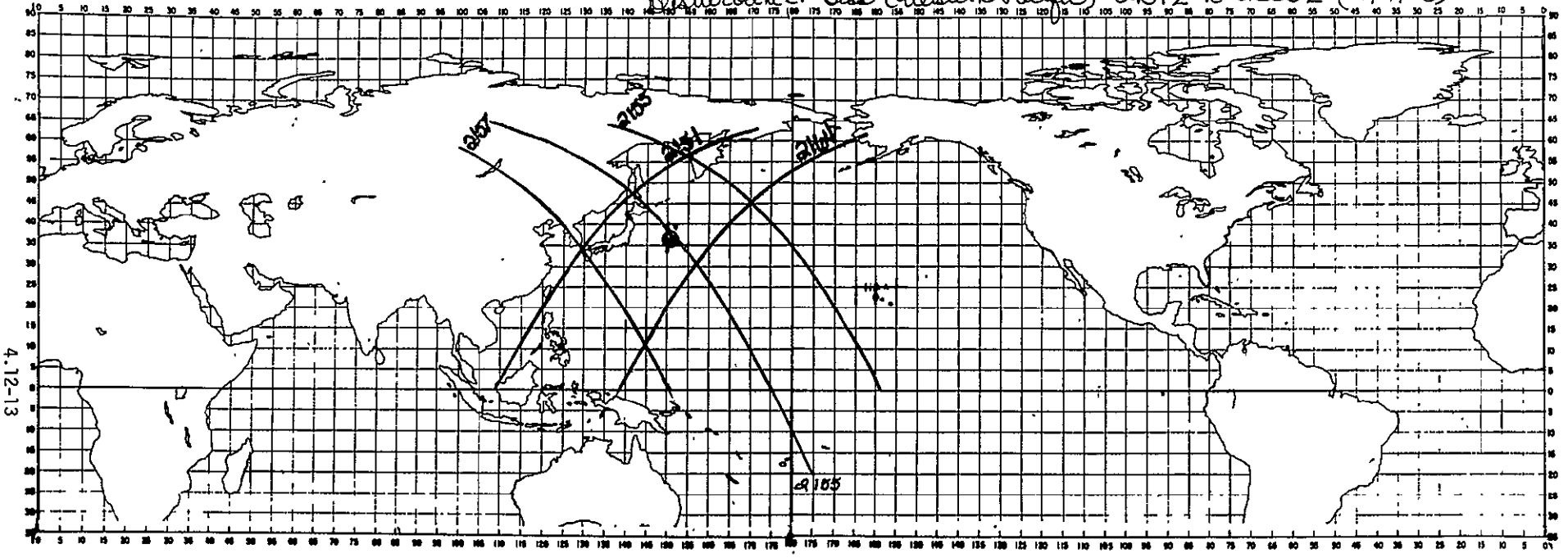
4.12-12

LOCATION

TIME	LATITUDE	LONGITUDE
0005Z	28.7N	146.3E
1057Z	30.3N	147.6E
2305Z	30.8N	148.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2137	-164.30	00 33 54 Z	01 11 Z	Do			
2142	169.09	09 08 49 Z	09 13 Z	Do			
2143	143.77	10 44 36 Z	10 52 Z	Do			
2150	-33.50	23 37 08 Z	23 20 Z	232001	233025	802	4/21

Disturbance: "Jess" (Western Pacific) - 0959Z to 2356Z (9/9/75)



4.12-13

LOCATION

TIME	LATITUDE	LONGITUDE
0959Z	34.2N	150.0E
2356Z	39.0N	153.2E

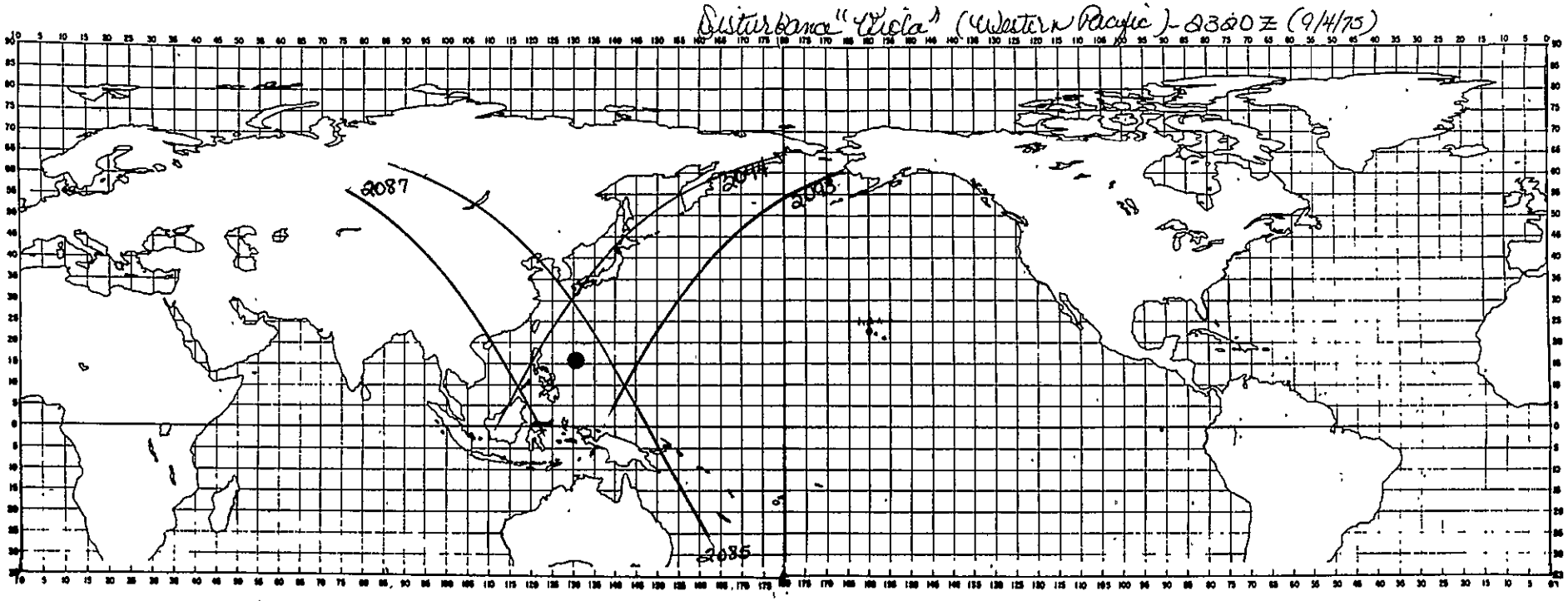
ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2161	-58.9a	00 18 53 Z	00 55 Z	No			
2155	-160.11	07 06 01 Z	07 22 Z	No			
2155	-160.11	07 06 01 Z	08 59 Z	083148	084654	802	4/24
2157	149.24	10 29 35 Z	10 39 Z	No			
2164	-28.02	22 22 05 Z	2303 Z	No			

DISTURBANCE: "VIOLA" TD-11; (WESTERN PACIFIC)

DATE: SEPT 4 - SEPT 7, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
9/4	2320Z	15.6N	130.8E			
9/5	1159Z	15.8N	131.0E			
9/6	0015Z 1059Z 2314Z	16.2N 19.0 20.0	131.5E 133.0 135.0			
9/7	1155Z	22.0N	136.0E			

NOTE: See track map, page 4.1-7

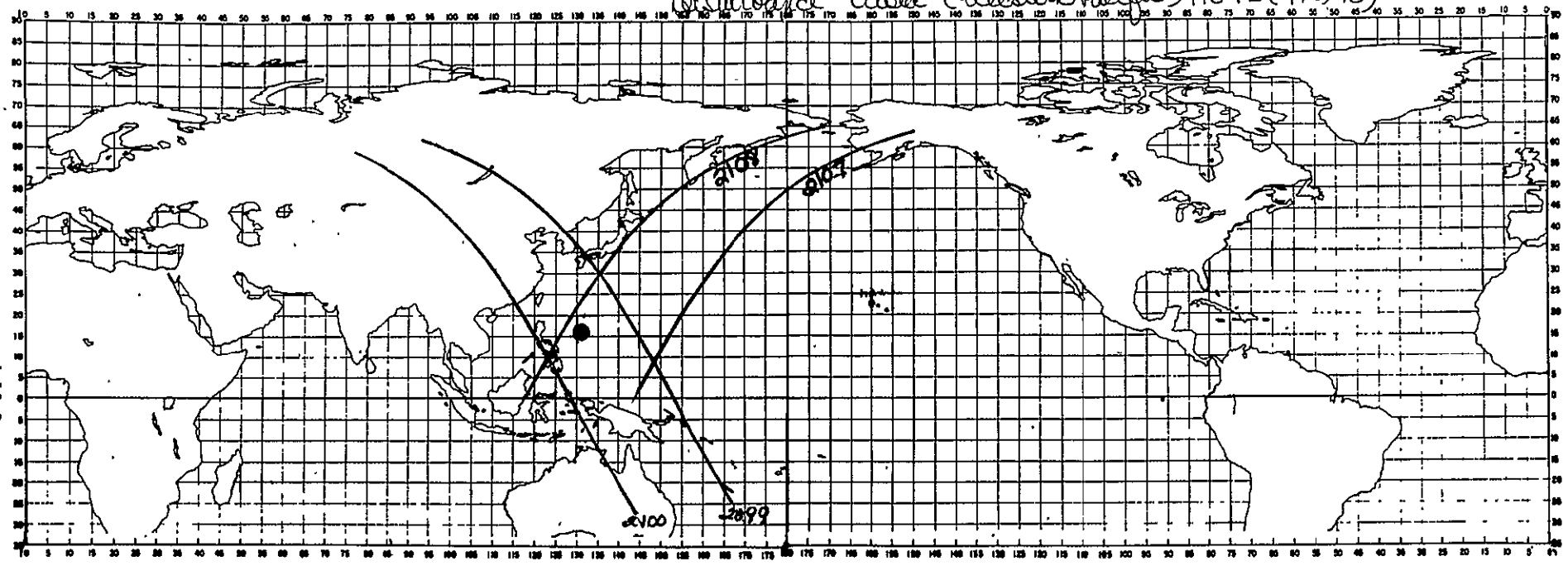


4.13-2

LOCATION

TIME	LATITUDE	LONGITUDE
2320Z	15.6N	130.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2085	172.50	08 21 05Z	10 09 Z	094141	101319	802	375
2087	121.87	11 44 39Z	11 47 Z	Do			
2093	-30.07	21 55 22Z	22 43Z	Do			
2094	-55.40	23 37 00Z	00 22Z	001640	002422	802	383



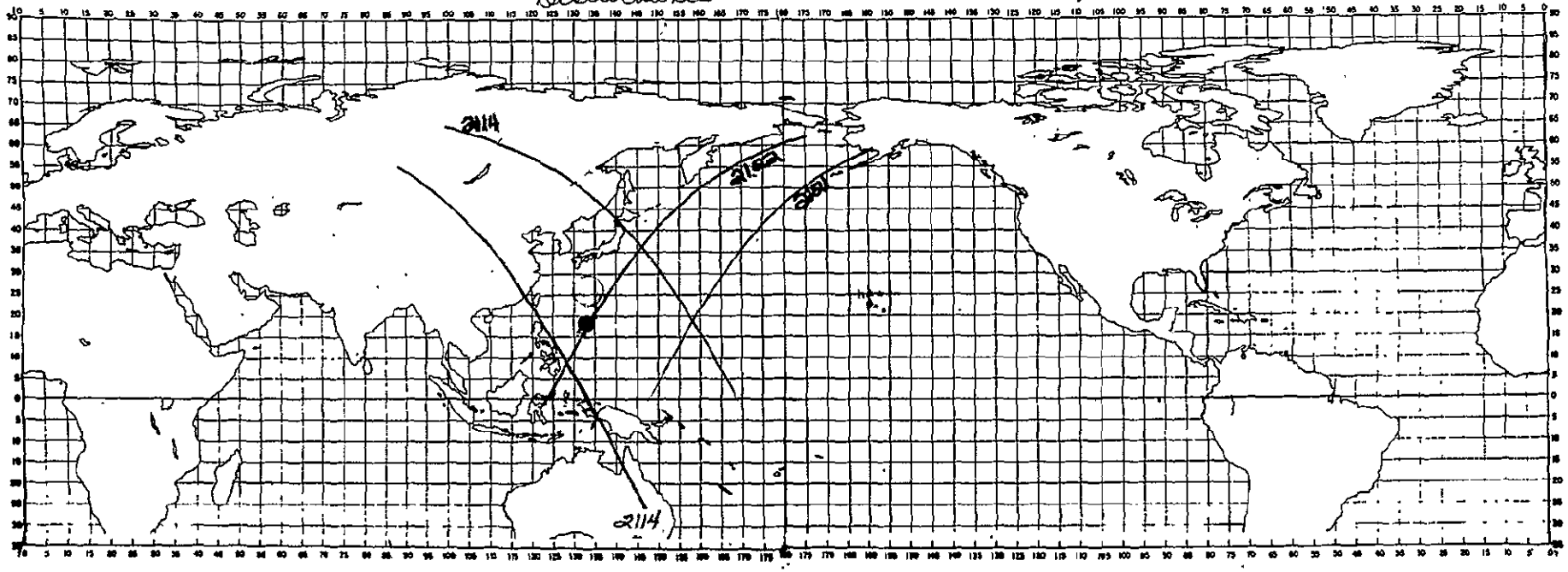
4.13-3

LOCATION

TIME	LATITUDE	LONGITUDE
1159Z	15.8N	131.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2099	177.98	08 06 04Z	09 54Z	092727	095904	802	385
2100	152.67	09 47 51Z	11 25Z	110604	113485	802	386
2107	-24.60	21 40 21Z	22 28Z	No			
2108	-49.92	23 22 08Z	00 08Z	000321	001131	802	393

Disturbance "Wrala" (Western Pacific) 0015Z to 2314Z (9/6/75)



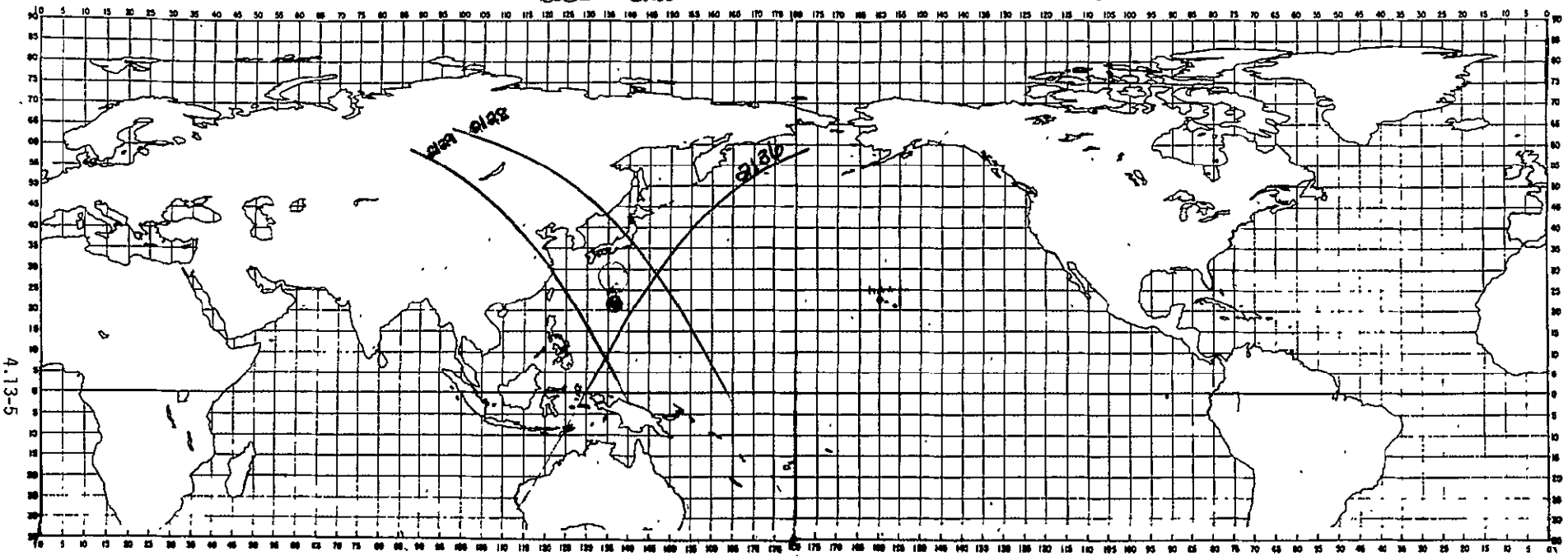
4.13-4

LOCATION

TIME	LATITUDE	LONGITUDE
0015Z	16.2N	131.5E
1059Z	19.0N	133.0E
2314Z	20.0N	136.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2114	168.14	09 32 51 Z	09 42 Z	Do			
2114	168.14	09 32 51 Z	11 20 Z	105140	112146	802	395
2121	-19.12	21 25 20 Z	22 12 Z	Do			
2122	-44.44	23 07 07 Z	23 52 Z	R94808	235813	802	405

Disturbance "Viola" (Western Pacific) 1155Z (9/1/15)



LOCATION

TIME	LATITUDE	LONGITUDE
1155Z	22.0N.	136.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2128	163.61	09 17 50 Z	0926Z	No			
2129	138.29	10 52 37 Z	1059Z	No			
2136	-38.97	22 52 07 Z	2337Z	No			

TYPHOON WINNIE

(September 7 - September 12, 1975)

Meteorological History/Data

Winnie was first detected by satellite on 5 September as a weak tropical disturbance approximately 300 nm northwest of Wake Island. At this time Typhoon Tess was approximately 900 nm to the northwest of Winnie with a surface trough extending southeastward to Wake Island. The combination of surface troughing and a favorable upper air pattern allowed this disturbance to develop. The first warning was issued early on the morning of the 9th based on satellite data.

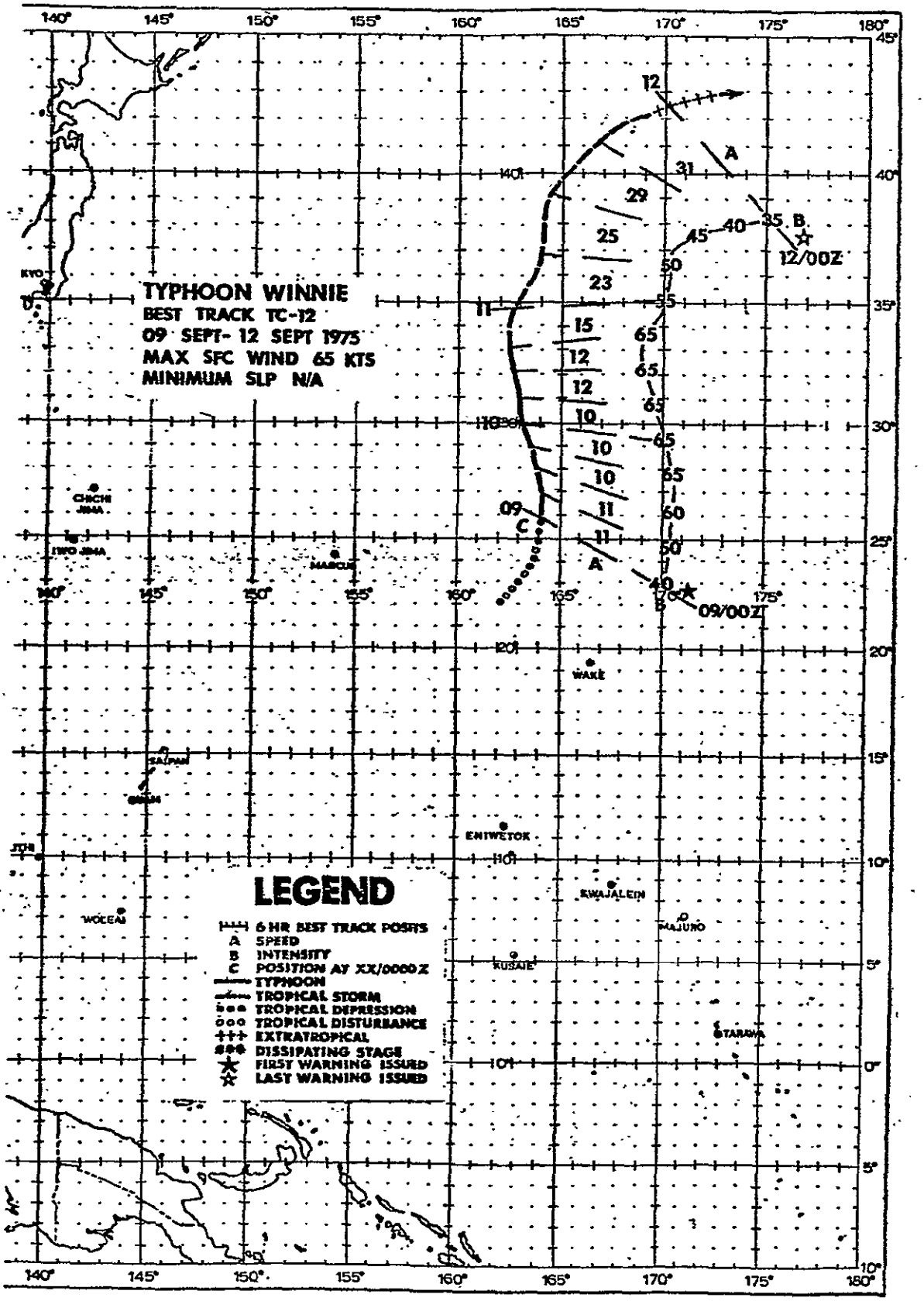
From her initial detection as a disturbance, Winnie moved slowly north-northeastward, attaining minimal tropical storm intensity at 2100Z on the 8th. The storm was now 400 nm north-northwest of Wake Island and posed no significant threat to any inhabited islands.

From the time of initial tropical storm strength until 1200Z on the 11th, Winnie was steered on a northerly course by the combination of a sharp mid-tropospheric trough to the west and a blocking ridge to the east. A 200 mb trough extending to the west of Winnie inhibited development past minimal typhoon strength with typhoon force winds persisting only for a 24-hour period from 1800Z on the 9th to 1800Z on the 10th. A Japanese ship (JEEU), located approximately 35 nm north of Winnie, reported sustained winds of 65 knots at 1800Z on the 9th.

Approaching a frontal system near 35N, Winnie came under stronger steering flow, accelerated to near 20 knots, and began to weaken. A short wave trough moving through the long wave ridge diminished its amplitude and Winnie assumed a more northeasterly track while continuing to accelerate. By 0000Z on the 12th, Winnie was absorbed into the frontal system and became an extratropical system with maximum winds of 30 knots.

Damage Estimates

Although no threat to inhabited islands, Winnie did represent a threat to shipping. It, in fact, sank a 44-foot sailboat, THE FLATBUSH MAN, on a pleasure cruise from Marcus Island to Hawaii. The four people aboard were adrift for 13 days in a rubber raft until 21 September when a Russian whaling vessel picked them up.

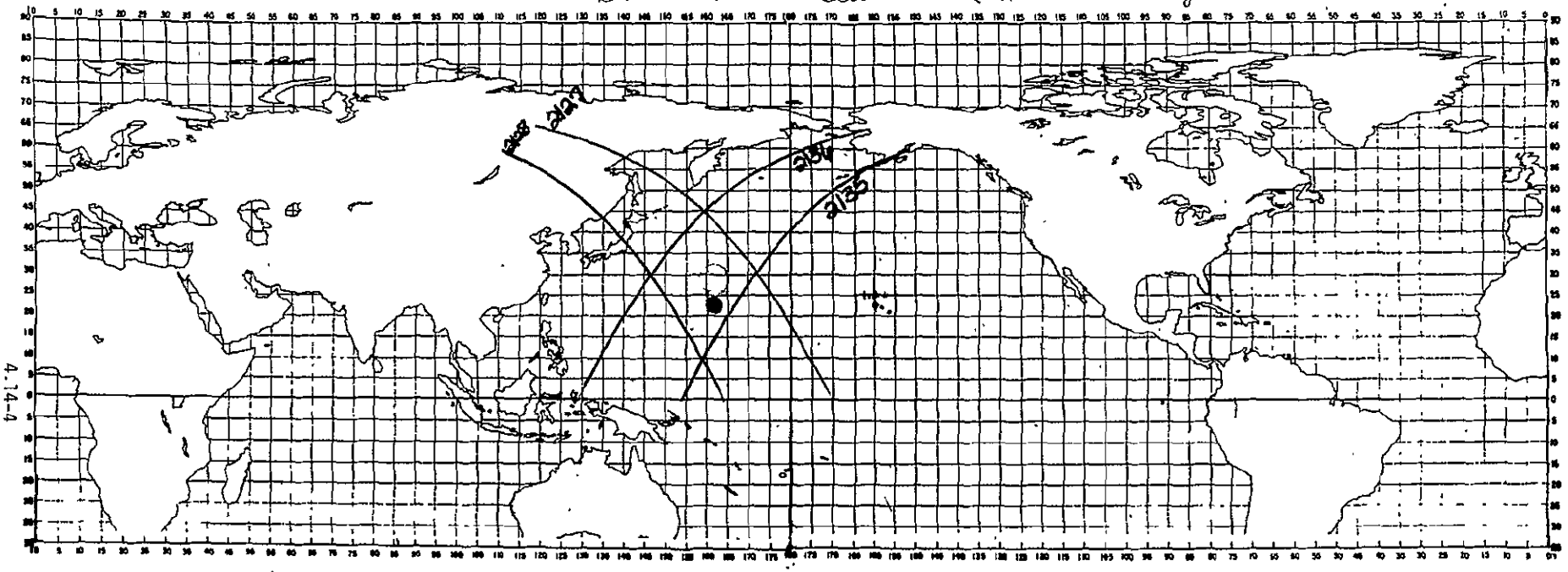

TYPHOON WINNIE
BEST TRACK TC-12
09 SEPT- 12 SEPT 1975
MAX SFC WIND 65 KTS
MINIMUM SLP N/A
12/00Z
09/00Z
LEGEND
6 HR BEST TRACK POSITS
A SPEED
B INTENSITY
C POSITION AT XX/0000Z
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
KYO
CHICHI JIMA
IWO JIMA
MARCUS
WAKE
SAIPAN
ENIWETOK
KWAJALEIN
MAJURO
KUSAIE
TARAWA
WOLEAI
JOHN

DISTURBANCE: "WINNIE" TD-12; (WESTERN PACIFIC)

DATE: SEPT 7 - SEPT 12, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
9/7	1000Z 2212Z	23.7N 22.5	162.0E 161.8			
9/8	0901Z 2112Z	23.8N 25.2	163.0E 164.2			Tropical Storm
9/9	0956Z 2205Z	27.1N 30.0	163.8E 163.0			Typhoon (1800Z)
9/10	0858Z 2238Z	31.5N 34.0	161.8E 161.8			Tropical Storm (1800Z)
9/11	0955Z 2157Z	38.1N 41.7	163.9E 168.6			
9/12	0857Z	44.5N	176.5E			Extratropical

Disturbance "Wilma" (Western Pacific) 1000Z to 2212Z (9/7/75)

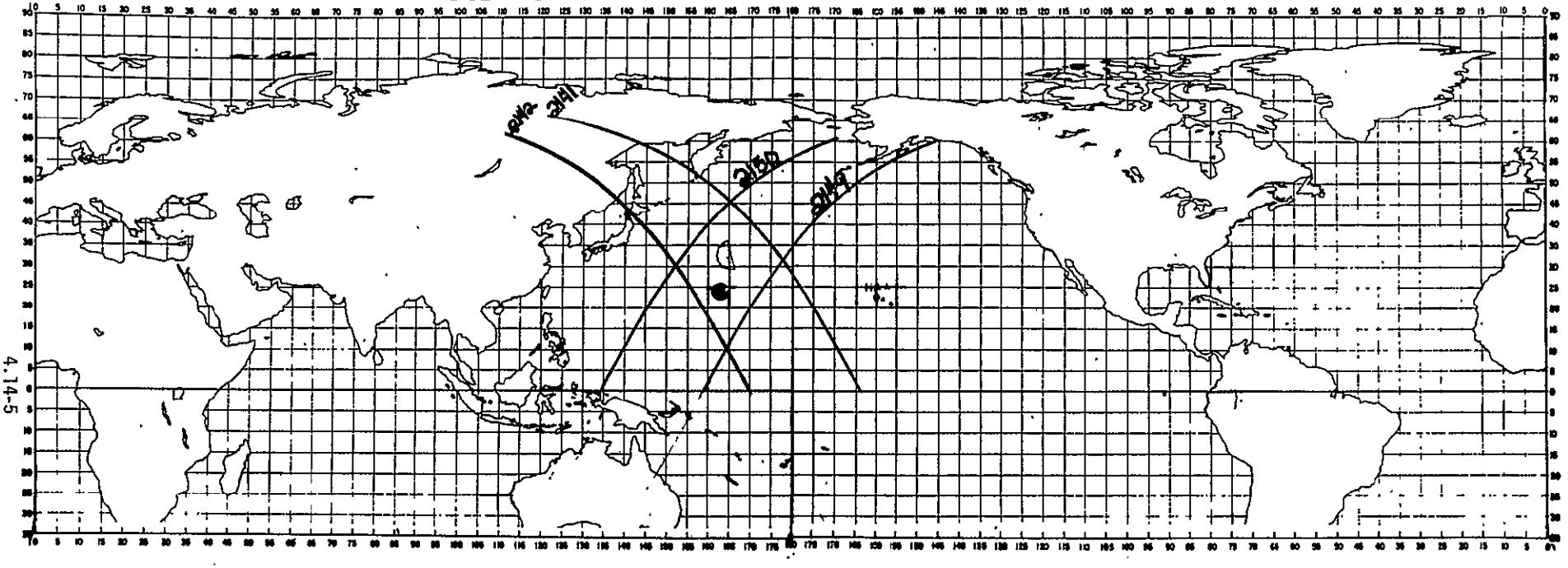


LOCATION

TIME	LATITUDE	LONGITUDE
1000Z	28.7 N.	162.0 E.
2212Z	22.5 N	161.8 E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2127	-171.06	07 36 03 Z	07 45 Z	Do			
2128	163.61	09 17 50 Z	09 24 Z	Do			
2135	-13.65	21 10 20 Z	21 54 Z	Do			
2136	-38.97	22 52 07 Z	23 34 Z	Do			

Disturbance "Winnie" (Western Pacific) 0901Z to 2112Z (9/8/75)



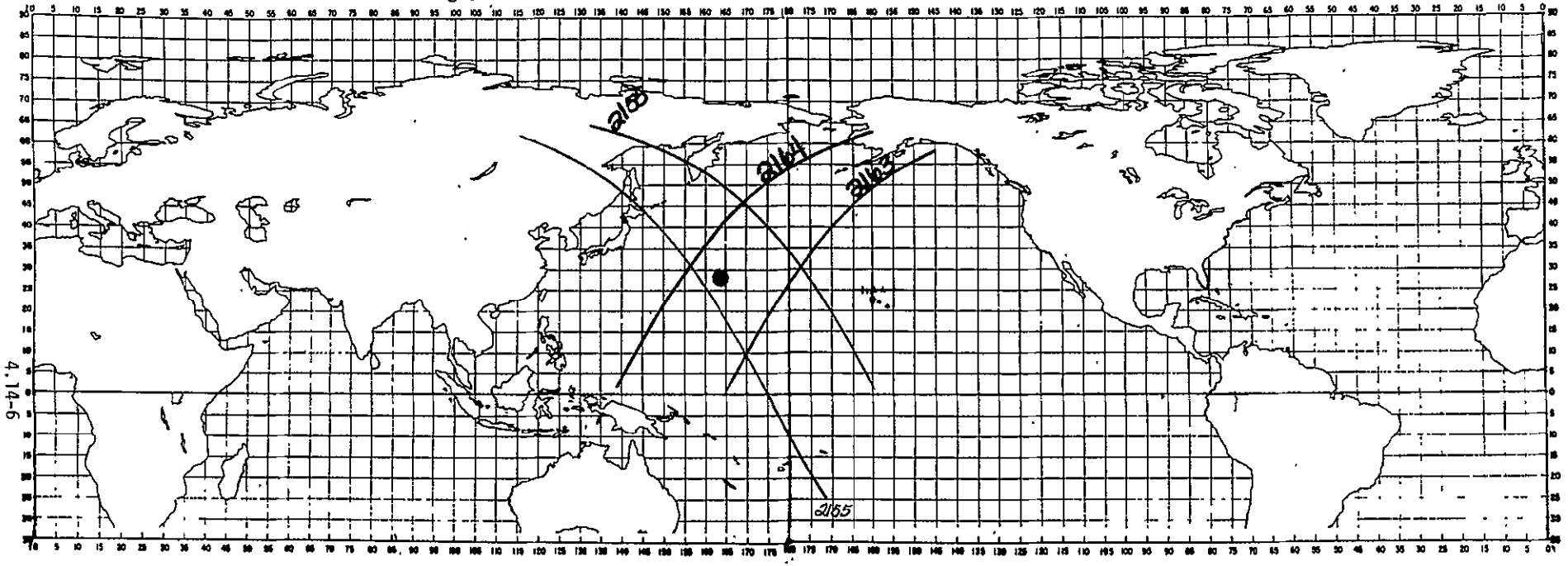
4.14-5

LOCATION

TIME	LATITUDE	LONGITUDE
0901Z	23.8N	163.0E
2112Z	25.2N	164.2E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2141	-165.59	07 21 02 Z	07 31 Z	Do			
2142	169.09	09 02 49 Z	09 09 Z	Do			
2149	-9.17	20 55 19 Z	21 40 Z	214656	215205	802	420
2150	-33.50	22 37 08 Z	23 19 Z	232001	233025	802	421

Disturbance "Winnie" (Western Pacific) 0956Z to 2205Z (9/9/75)



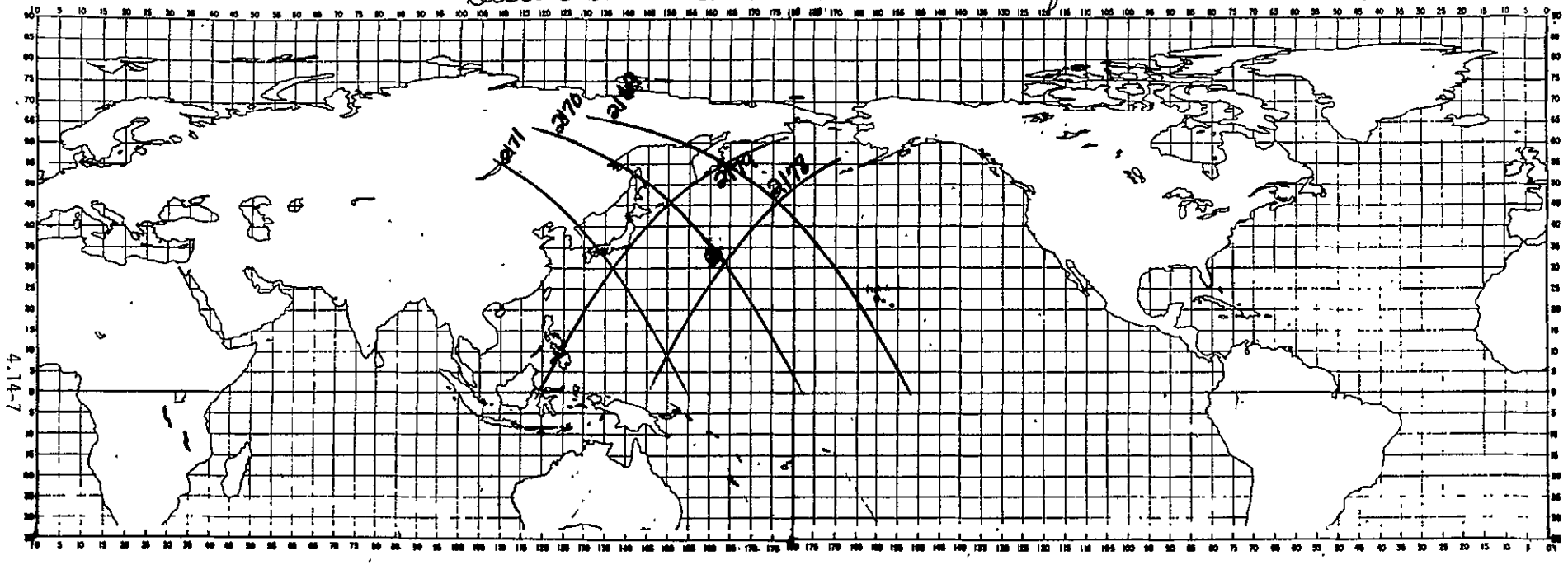
4.14-6

LOCATION

TIME	LATITUDE	LONGITUDE
0956Z	27.1N	163.8E
2205Z	30.0N	163.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2155	-160.11	07 06 01 Z	08 56 Z	083148	084654	802	424
2163	-8.70	20 40 18 Z	21 24 Z	No			
2164	-28.02	22 22 05 Z	23 03 Z	No			

Disturbance "Wilma" (Western Pacific) 0858Z to 2238Z (9/10/75)



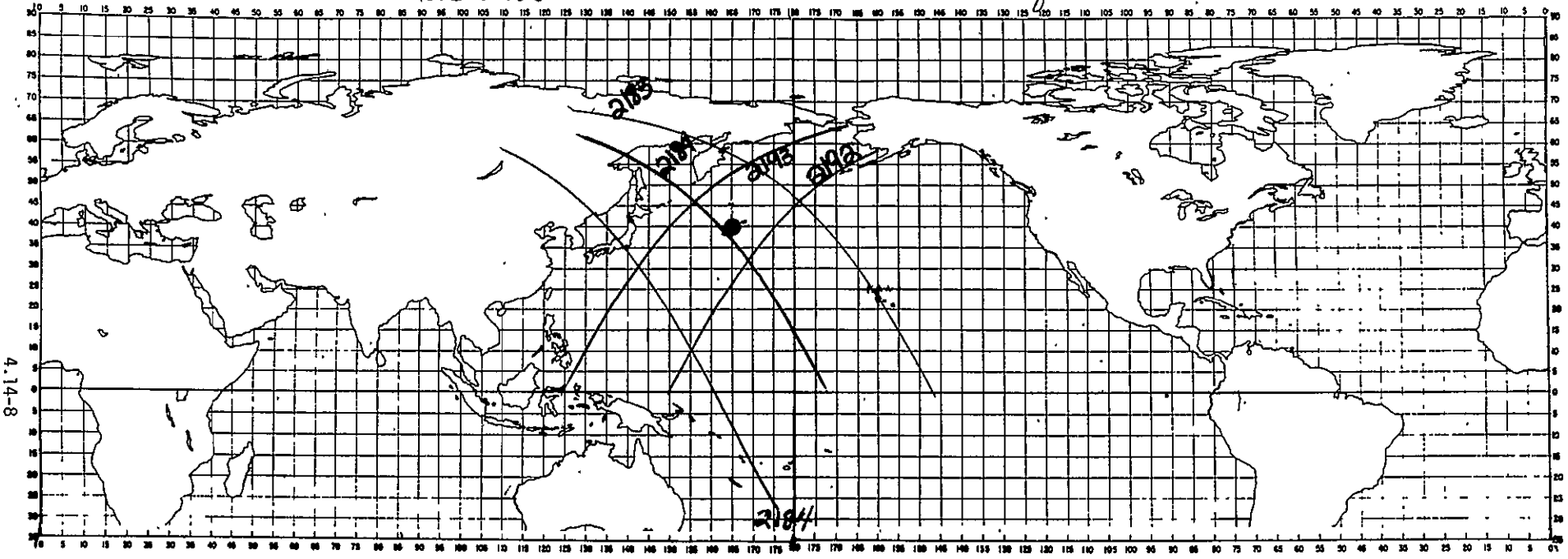
4.14-7

LOCATION

TIME	LATITUDE	LONGITUDE
0858Z	31.5N	161.8E
2238Z	34.0N	161.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2169	-154.84	06 51 01 Z	07 06 Z	Do			
2170	-179.98	08 32 48 Z	08 43 Z	Do			
2171	154.71	10 14 35 Z	10 22 Z	Do			
2178	-22.55	22 07 04 Z	22 48 Z	Do			
2179	-47.87	23 48 51 Z	00 26 Z	Do			

Disturbance "Winnie" (Western Pacific) 0955Z to 2157Z (9/11/78)

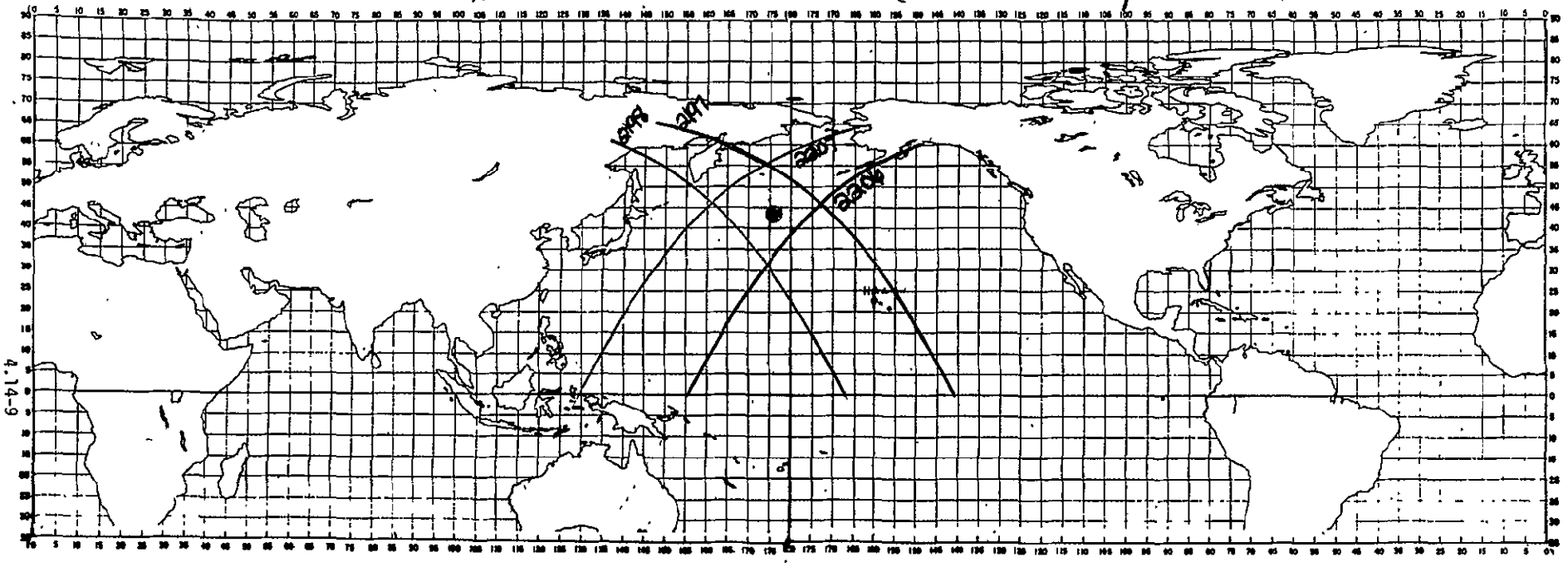


LOCATION

TIME	LATITUDE	LONGITUDE
0955Z	38.1N	163.9E
2157Z	41.7N	168.6E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2183	-149.16	06 36 00 Z	06 58 Z	No			
2184	-174.49	08 17 47 Z	08 30 Z	No			
2184	-174.49	08 17 47 Z	10 00 Z	100051	10 1003	802	447
2192	-17.07	21 52 04 Z	22 31 Z	No			
2193	-42.40	23 33 51 Z	00 10 Z	No			

Disturbance "Wilma" (Western Pacific) 0857Z (9/12/75)



4.14-9

LOCATION

TIME	LATITUDE	LONGITUDE
0857Z	44.5N	176.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2197	-143.19	06 20 59 Z	06 37 Z	Do			
2198	-169.01	08 08 46 Z	08 15 Z	Do			
2206	-11.60	21 37 03 Z	22 11 Z	220652	220855	802	463
2207	-36.92	23 18 50 Z	23 53 Z	Do			

TYPHOON ALICE

(September 15 - September 20, 1975)

Meteorological History/Data

On 11 September, a tropical upper tropospheric trough extended westward across the western North Pacific into the South China Sea with several cyclonic cells apparent along the trough axis. On the morning of the 12th, a tropical disturbance was identified on satellite data to the south of the trough, near 12N, 148E. Outflow weakened over the disturbance as the trough moved to the northwest; this rendered upper-level divergence insufficient to induce a surface vortex and stimulate further development. The anticyclone drifted westward with little apparent change until the 15th, when it moved over a small vortex in the monsoon trough near 13N 131E. As this upper-level anticyclone became vertically aligned over the surface cyclone, the system underwent rapid tropical cyclone development.

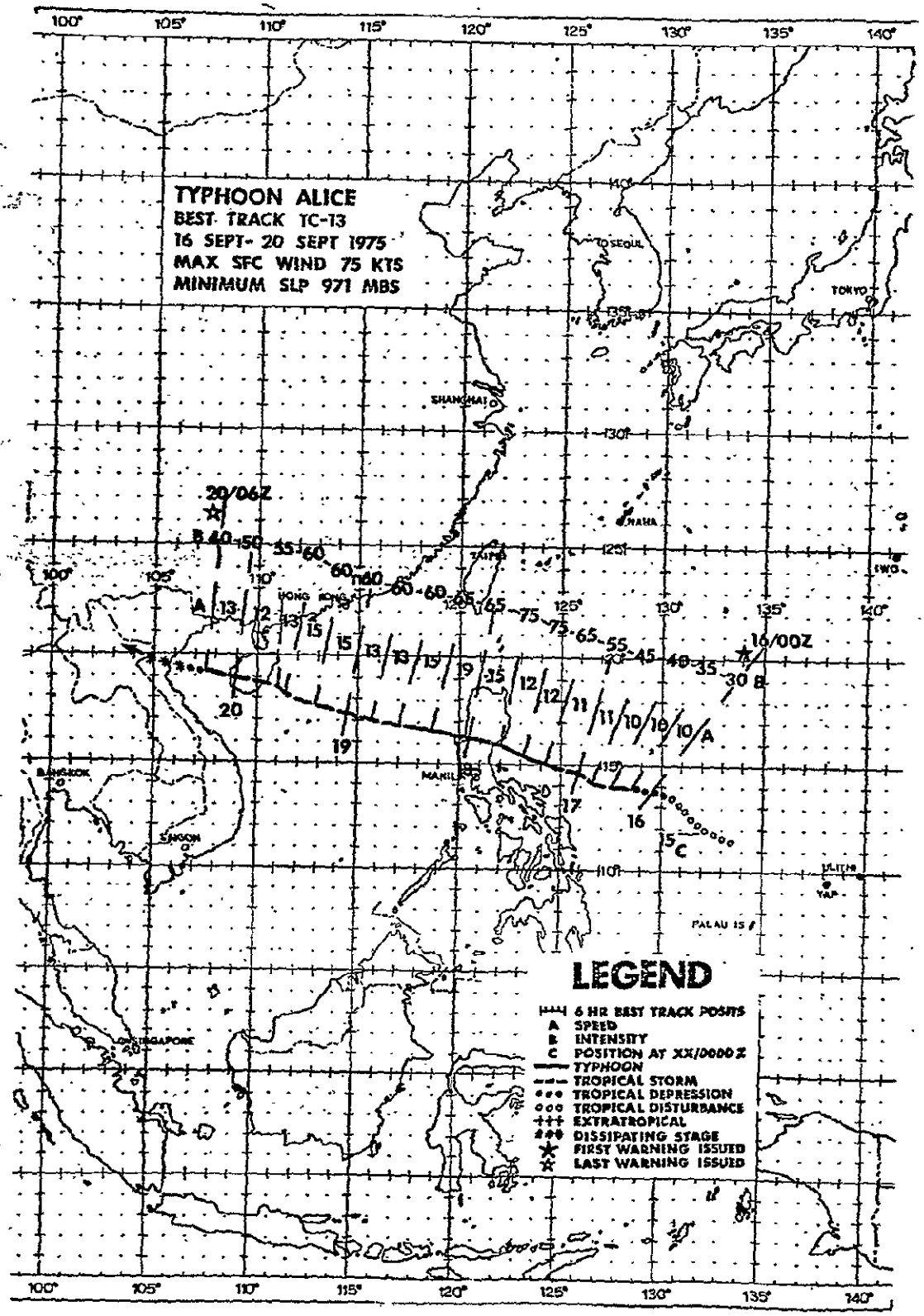
This system became Tropical Storm Alice on the afternoon of the 16th and intensified to typhoon strength within 24 hours. On the 17th at 1430Z, aircraft reconnaissance data indicated a 32-mb drop in central pressure during the previous 21 hours and maximum flight level winds of 105 knots were recorded on this eye penetration. Reduced inflow resulting from the development of Typhoon Betty (1200 nm to the east) inhibited further development as Alice approached central Luzon. At 2000Z on the 17th, the typhoon made landfall near Casiguran, Luzon with maximum surface winds of 75 knots.

Alice passed Luzon near 16N, and entered the South China Sea at 0400Z on the 18th with surface winds of 65 knots. Wallace Air Station reported winds of 40 knots with gusts to 60 knots at 0129Z; a peak gust of 42 knots was recorded at Baguio at 0432A. No significant damage was reported during the Luzon crossing.

Alice continued to a west-northwest track across the South China Sea in response to moderate steering flow along the southern periphery of the 500 mb subtropical ridge. Maximum surface winds decreased to 60 knots at 1200Z on the 18th and Alice maintained that intensity until just prior to striking the Hainan coast at 1800Z on the 19th. Alice was still well-organized as she entered the Gulf of Tonkin with 50-knot winds, but weakened rapidly thereafter and dissipated upon moving inland over North Vietnam.

Damage Estimates

No significant damage was reported.



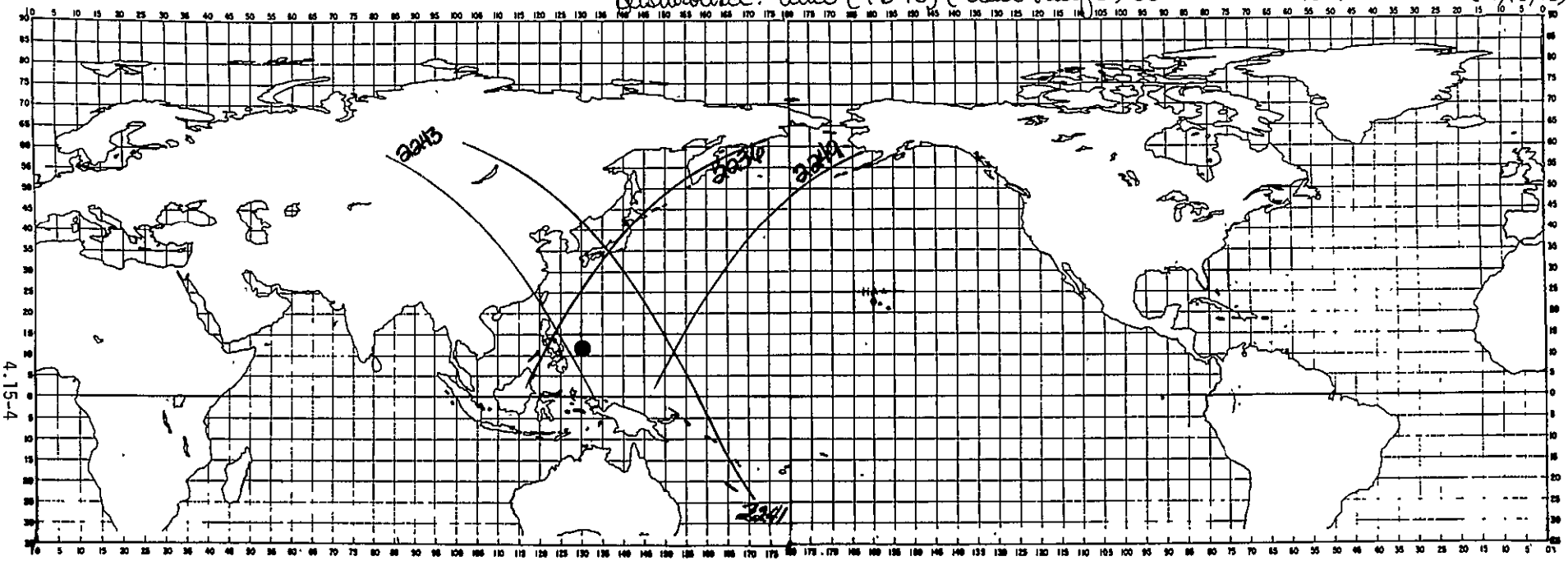
DISTURBANCE: "ALICE" TD-13; (WESTERN PACIFIC)

DATE: SEPT 15 - SEPT 20, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
9/15	0051Z 1132Z 2351Z	12.8N 13.0 13.8	~~131~~.8E 130.5 129.4			
9/16	1227Z	14.5N	127.0E			Tropical Storm
9/17	0046Z 1128Z	14.9N 15.2	124.1E 122.5		105 (1430Z) 75 (2000Z)	Typhoon (1430Z)
9/18	0140Z 1224Z	16.0N 17.1	120.2E 116.2		65 (0400Z) 60 (1200Z)	Typhoon
9/19	0040Z ????Z	17.6N 19.4	114.8E* 110.5*			
9/20	1220Z	20.0N	105.0E*			No Classification

*Over Land

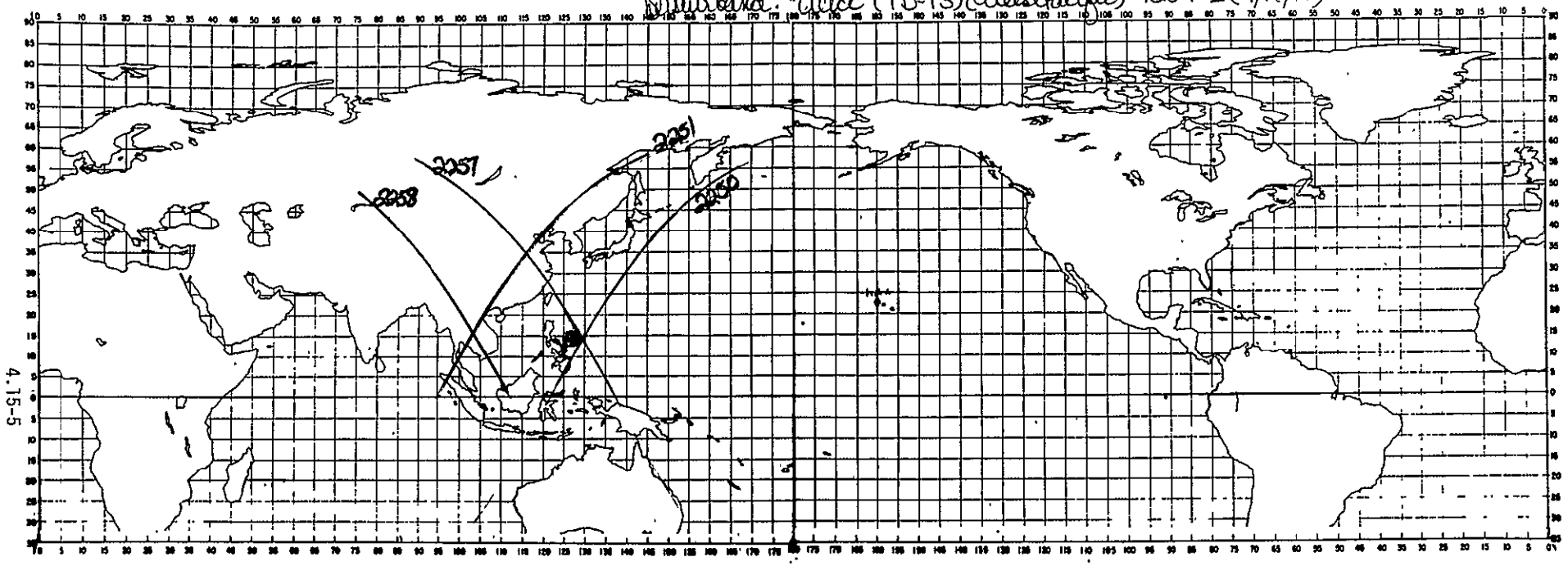
Disturbance: "Alice" (TD-13) (West Pacific) 0051Z to 1132Z to 2351Z (9/18/75)



LOCATION

TIME	LATITUDE	LONGITUDE
0051Z	12.8N	131.8E
1132Z	13.0N	130.5E
2351Z	13.8N	169.4E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2236	-51.80	00 30 35Z	01 17Z	Do			
2241	-177.91	08 59 31Z	10 47Z	104035	105249	802	485
2243	131.44	12 23 05Z	12 24Z	Do			
2249	-20.60	22 33 48Z	23 24Z	232033	233251	802	490

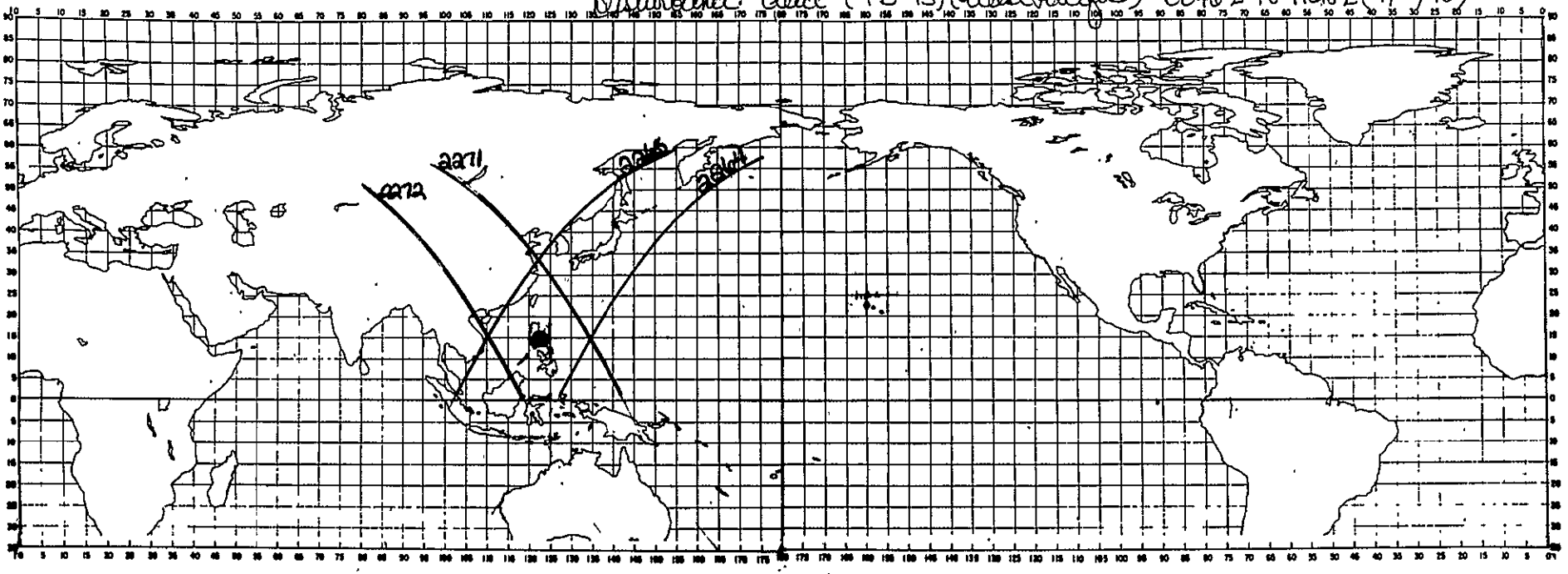


LOCATION

TIME	LATITUDE	LONGITUDE
1227Z	14.5N	127.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2250	-45.83	00 15 35 Z	01 03 Z	No			
2251	-71.15	01 57 22 Z	02 40 Z	No			
2257	136.91	12 08 04 Z	12 13 Z	No			
2258	111.59	13 49 51 Z	13 52 Z	No			

Disturbance: "Alice" (TD-13) (West Pacific) - 0046Z to 1128Z (9/17/75)



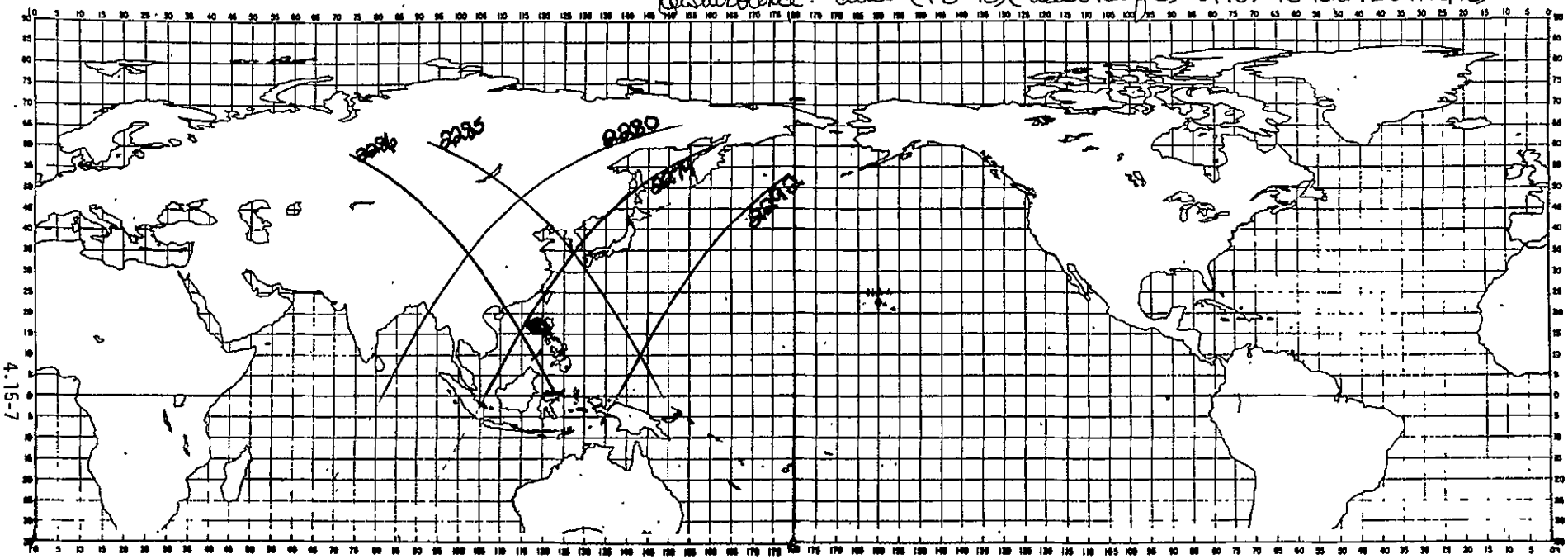
4.15-6

LOCATION

TIME	LATITUDE	LONGITUDE
0046Z	14.9N	104.1E
1128Z	15.0N	100.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2264	-40.35	00 00 34 Z	00 49 Z	004213	005251	802	503
2265	-165.67	01 42 21 Z	02 27 Z	Do			
2271	142.39	11 53 04 Z	11 59 Z	Do			
2272	117.06	13 34 51 Z	13 38 Z	Do			

Disturbance: "Alice" (TD-13) (West Pacific) - 0140Z to 1224Z (9/18/75)



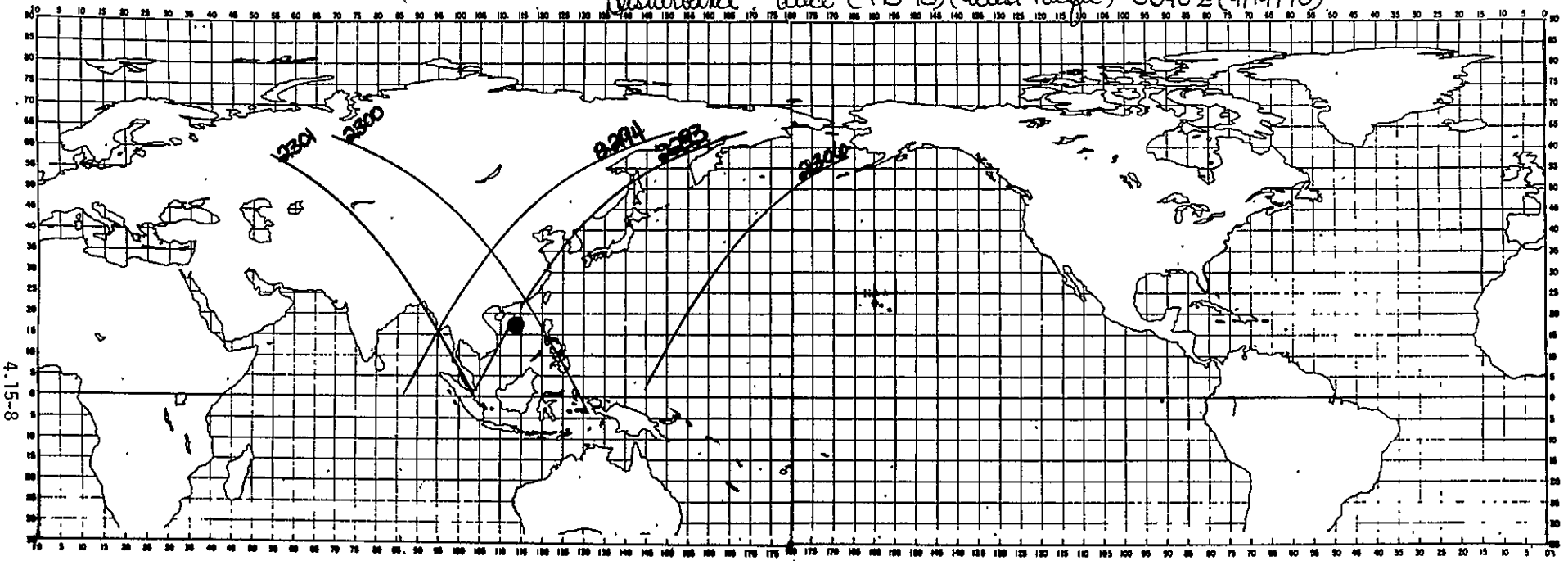
4.15-7

LOCATION

TIME	LATITUDE	LONGITUDE
0140Z	16.0N	120.2E
1224Z	17.1N	116.2E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2279	-60.20	01 27 30 Z	02 12 Z	No			
2280	-85.52	03 03 07 Z	03 46 Z	No			
2285	147.86	11 38 03 Z	12 46 Z	No			
2286	122.54	13 19 30 Z	13 24 Z	No			
2292	-29.46	23 30 32 Z	00 21 Z	No			

Disturbance: "Alice" (TD-13) (West Pacific) - 0040Z (9/19/70)



4.15-8

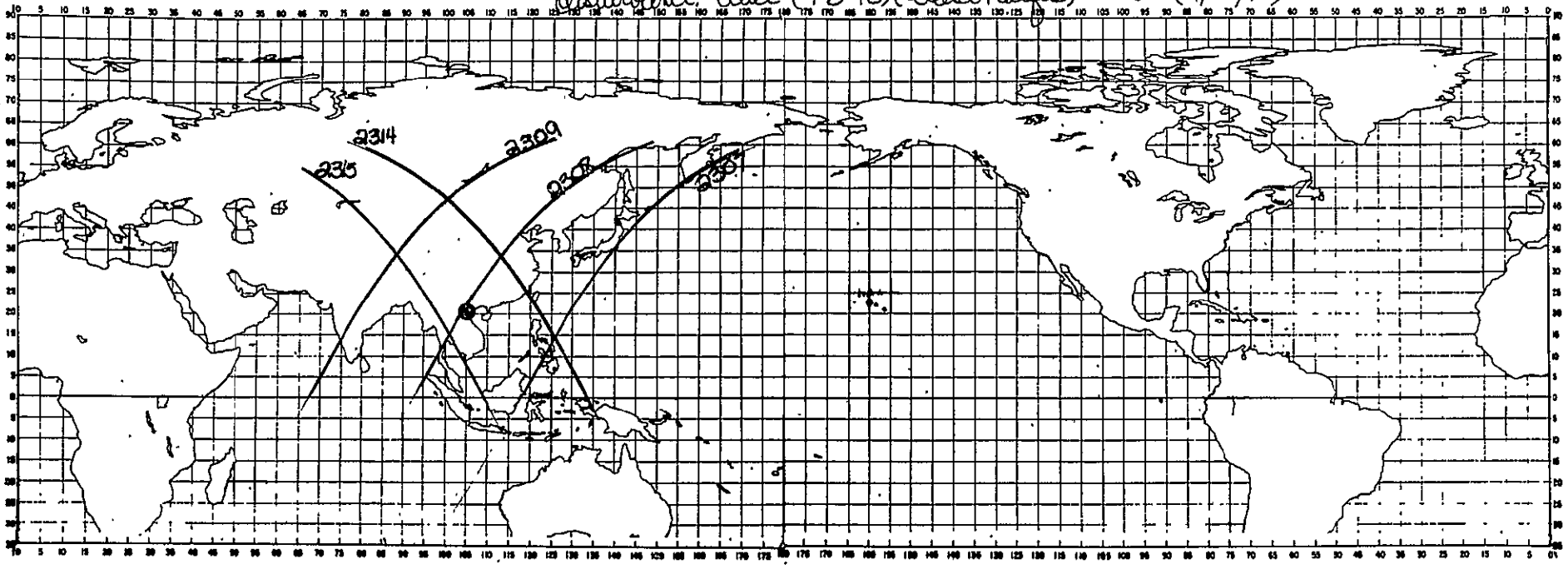
LOCATION

TIME	LATITUDE	LONGITUDE
0040Z	17.6N	114.8E*

*Over land

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2293	-64.73	01 12 20Z	01 57Z	No			
2294	-80.05	02 54 07Z	03 38Z	No			
2300	128.01	13 04 48Z	13 11Z	No			
2301	102.69	14 46 36Z	14 51Z	No			
2306	-23.93	23 15 52Z	00 06Z	No			

Disturbance: "Alice" (TD-13) (West Pacific) - 1220 Z (9/20/15)



4.15-9

LOCATION

TIME	LATITUDE	LONGITUDE
1220Z	20.0N	106.0E*

*Overland

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2307	-49.25	00 57 19 Z	01 45 Z	No			
2308	-24.57	02 38 06 Z	03 23 Z	No			
2309	-99.90	04 20 53 Z	05 02 Z	No			
2314	133.49	12 48 48 Z	12 58 Z	No			
2315	108.16	14 31 36 Z	14 37 Z	No			

TYPHOON BETTY

(September 16 - September 23, 1976)

Meteorological History/Data

As Typhoon Alice approached the Philippine Islands on the 16th of September, another tropical circulation was detected in the monsoonal trough some 200 nm south of Guam. Moving northward at nearly 20 knots, this disturbance passed within 50 nm of Guam early on the 17th. By the afternoon of the 17th the circulation, now TD-14, turned sharply to the west as it approached the southern periphery of the subtropical ridge. TD-14 attained tropical storm intensity on the morning of the 18th while moving westward at 12 knots.

The subtropical ridge to the west of Tropical Storm Betty was weakened by a series of middle tropospheric short wave troughs. This produced weak steering currents for the storm and the westward movement slowed to 5 knots. By the 19th, the subtropical ridge, influenced by Typhoon Alice, intensified and receded to the north. In response, Betty began moving northwestward and accelerated to 13 knots.

On the 19th, as a weak upper tropospheric trough to the west deepened, and created a highly efficient outflow channel to the mid-latitude westerlies, Betty began to intensify. By the 20th, Alice had weakened, allowing the subtropical ridge northwest of Betty to build southward. Betty again responded by moving westward. At 0230Z on the 22nd, Typhoon Betty attained a maximum intensity of 95 knots as reconnaissance aircraft recorded a minimum sea-level pressure of 944 mb. The outflow channel to the north (evident on the 19th) was severed by the 21st, but by then Betty had established an outflow channel to the upper tropospheric monsoon easterlies to the south; thus, Betty continued to intensify until the 22nd.

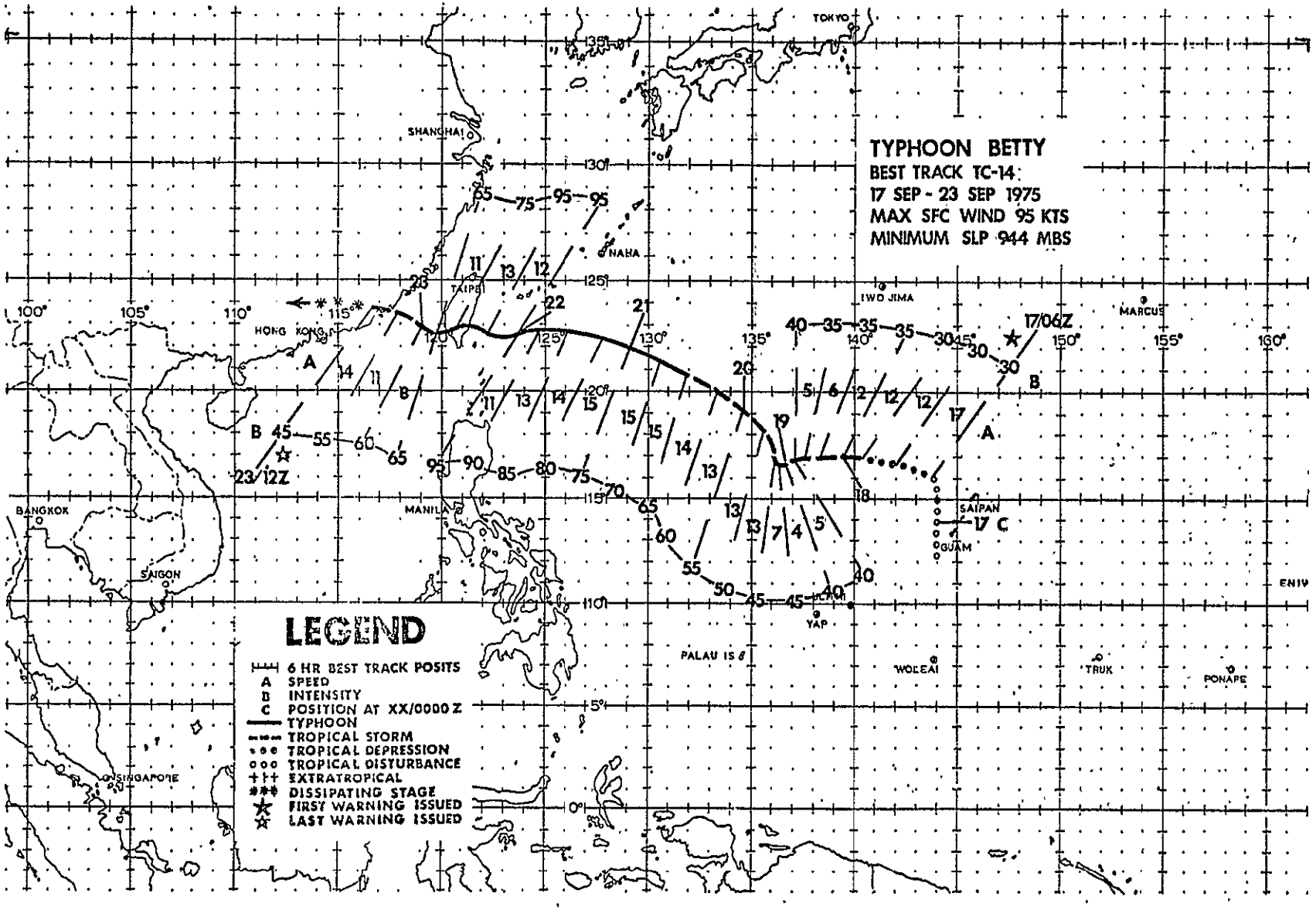
At 1200Z on the 21st, a ship located 140 nm northeast of the storm estimated winds at 55 knots and seas of 27 feet. The 22 September 0000Z rawinsonde at Ishagakishima (110 nm NNE of Betty) showed 70-knot winds from the 3,000 foot through the 18,000 foot level.

The typhoon, when some 120 nm from Taiwan, was placed under constant surveillance by the radar at Hualien, Taiwan. Upon reaching Taiwan, Betty began to weaken. The typhoon's track became west-northwestward as the storm interacted with a lee-side trough created by the high mountain ranges on Taiwan. Containing winds near 80 knots, Betty crossed into southern Taiwan about 15 nm north of Taitung.

After crossing the mountains of southern Taiwan, the storm's track became west-southwestward. Weakened by the rugged terrain, Betty entered the Taiwan Strait as a minimal typhoon. It continued to weaken and crossed the Chinese coast on the evening of the 23rd with 50-knot winds. By the 24th, Betty had degenerated into a low pressure area some 100 nm north of Hong Kong.

Damage Estimates/Loss of Life

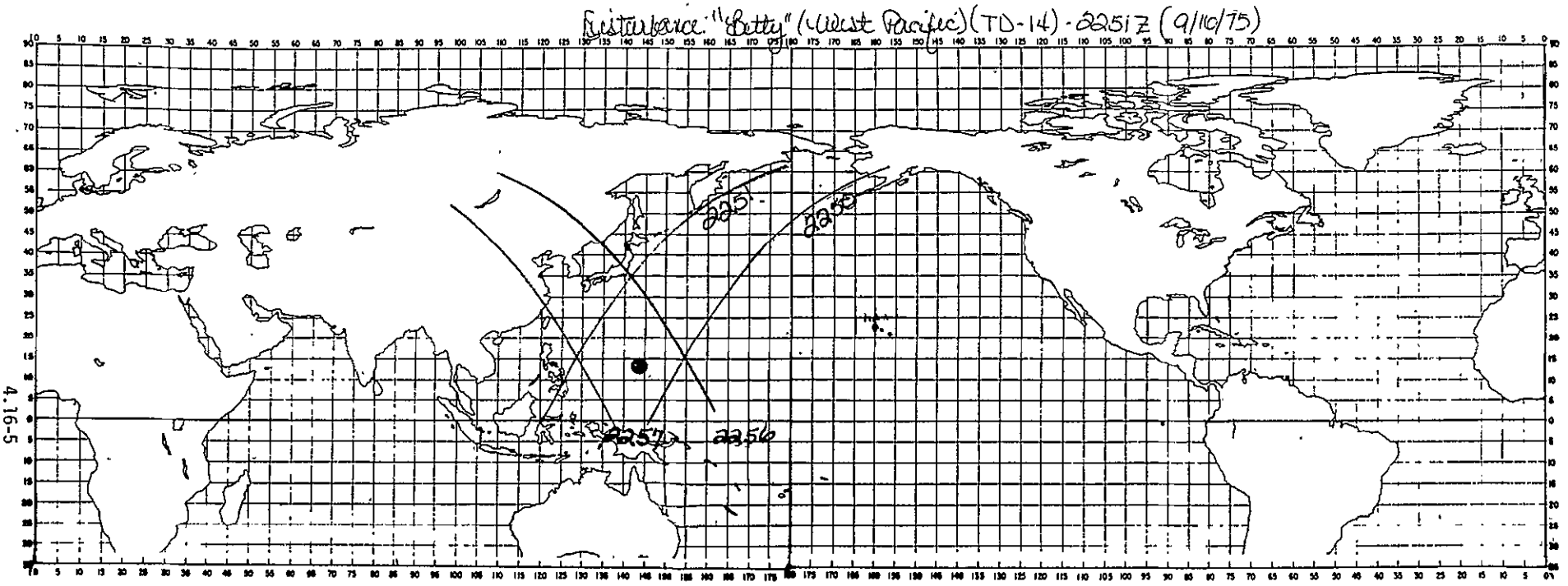
Unofficial reports indicated 12 dead, scores injured, and hundreds homeless in the typhoon's wake. Nearly a thousand tourists were stranded as mud slides covered highways. In addition, more than 200 homes were leveled and hundreds of others damaged.


TYPHOON BETTY
BEST TRACK TC-14
17 SEP - 23 SEP 1975
MAX SFC WIND 95 KTS
MINIMUM SLP 944 MBS
LEGEND
6 HR BEST TRACK POSITS
A SPEED
B INTENSITY
C POSITION AT XX/0000 Z
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
TOKYO
SHANGHAI
NAHA
TAIPEI
HONG KONG
IWO JIMA
MARCUS
BANGKOK
SAIGON
MANILA
SAIPAN
GUAM
YAP
PALAU IS
WOLEAI
TRUK
PONAPE
SINGAPORE
17/06Z
23/12Z
17 C

DISTURBANCE: "BETTY" TD-14; (WESTERN PACIFIC)

DATE: SEPT 16 - SEPT 23, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
9/16	2251Z	13.8N	144.3E			
9/17	1128Z 2345Z	16.0N 16.7	141.0E 139.2			
9/18	1029Z	16.8N	137.0E			Tropical Storm
9/19	0040Z 1123Z 2333Z	17.0N 17.2 18.9	138.3E 137.0 134.8			
9/20	1220Z	21.5N	131.8E			
9/21	0033Z 1121Z	21.4N 23.2	129.0E 125.9			
9/22	0127Z 1215Z	22.2N 22.5	123.5E 120.0	944	95 (0230Z)	Typhoon
9/23	0028Z	22.8N (Over Land)	119.0E			



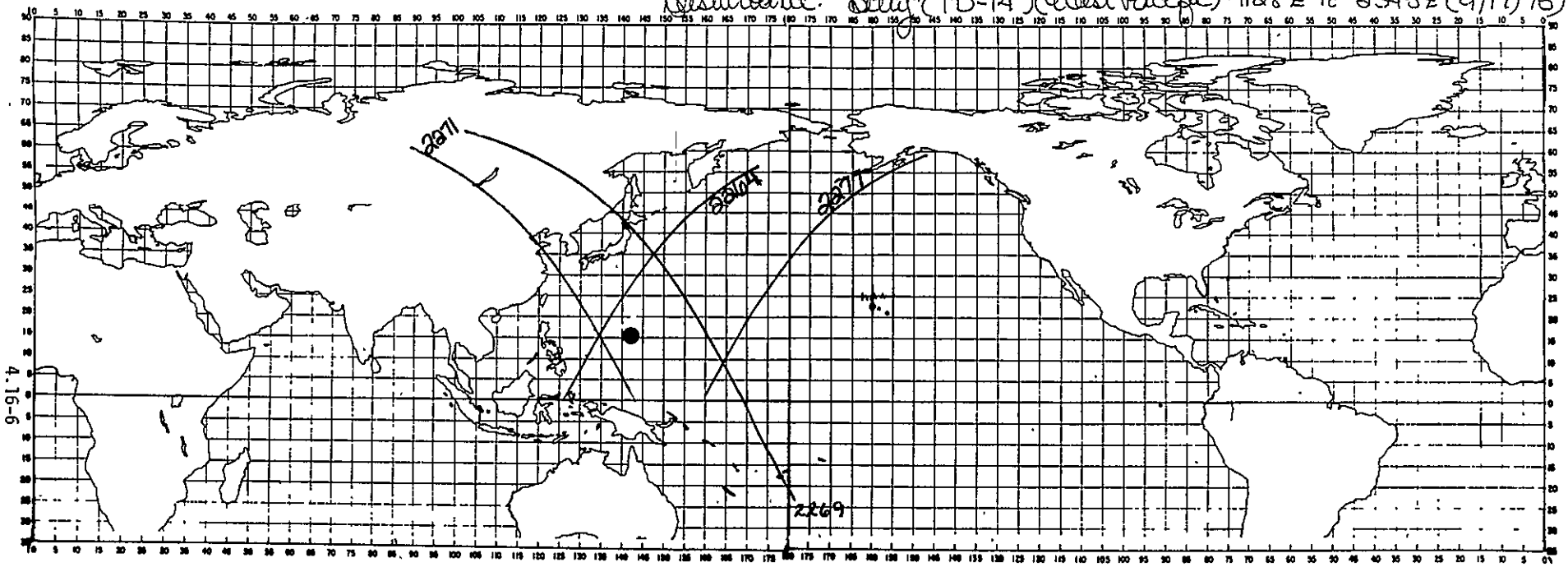
4.16-5

LOCATION

TIME	LATITUDE	LONGITUDE
2356Z	13.8N	144.3E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
8250	-45.83	00 15 35 Z	01 04 Z	No			
2251	-71.5	01 57 22 Z	02 42 Z	No			
2256	162.24	10 26 17 Z	10 32 Z	No			
2257	136.91	12 08 04 Z	12 11 Z	No			

Disturbance: "Betty" (TD-14) (West Pacific) - 1128Z to 2345Z (9/17/75)

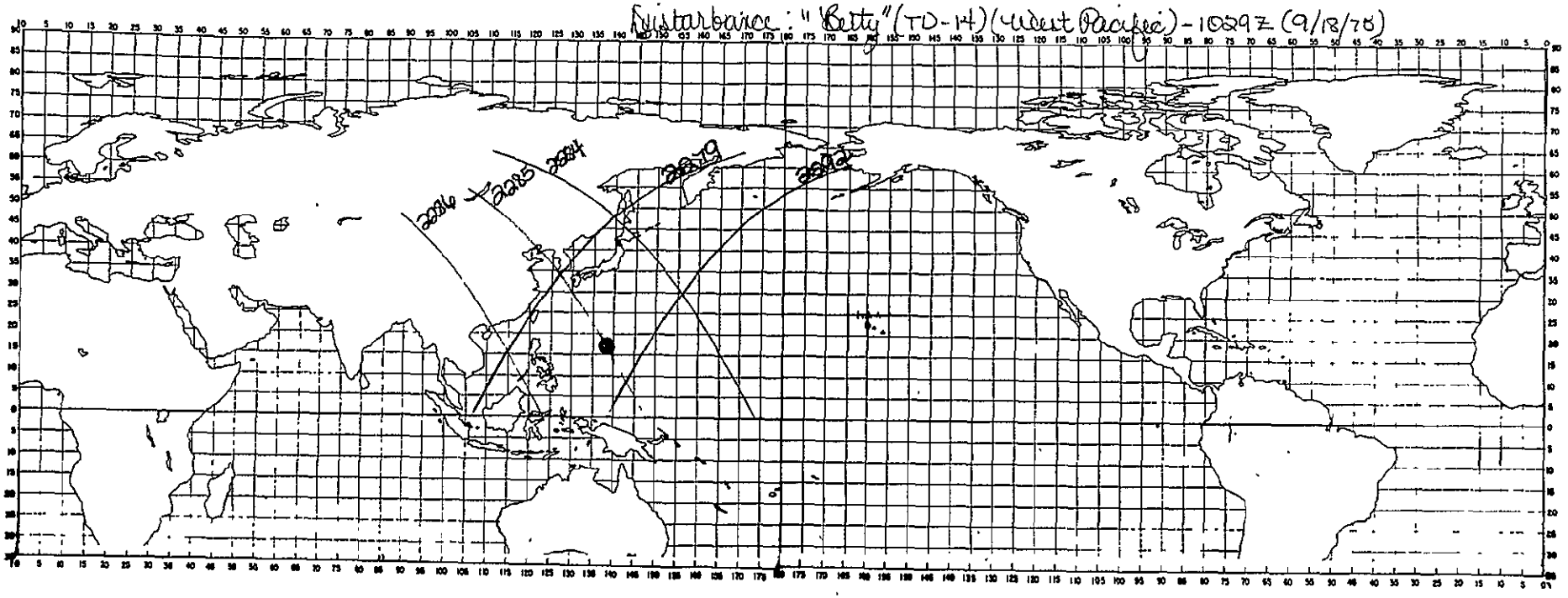


4.16-6

LOCATION

TIME	LATITUDE	LONGITUDE
1128Z	16.0N	141.0E
2345Z	16.7N	139.2E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2264	-40.35	00 00 34 Z	00 46 Z	004212	005251	802	503
2269	-166.96	08 29 29 Z	10 19 Z	095338	102403	802	506
2271	142.39	11 53 04 Z	11 57 Z	No			
2277	-9.55	22 03 46 Z	22 53 Z	No			



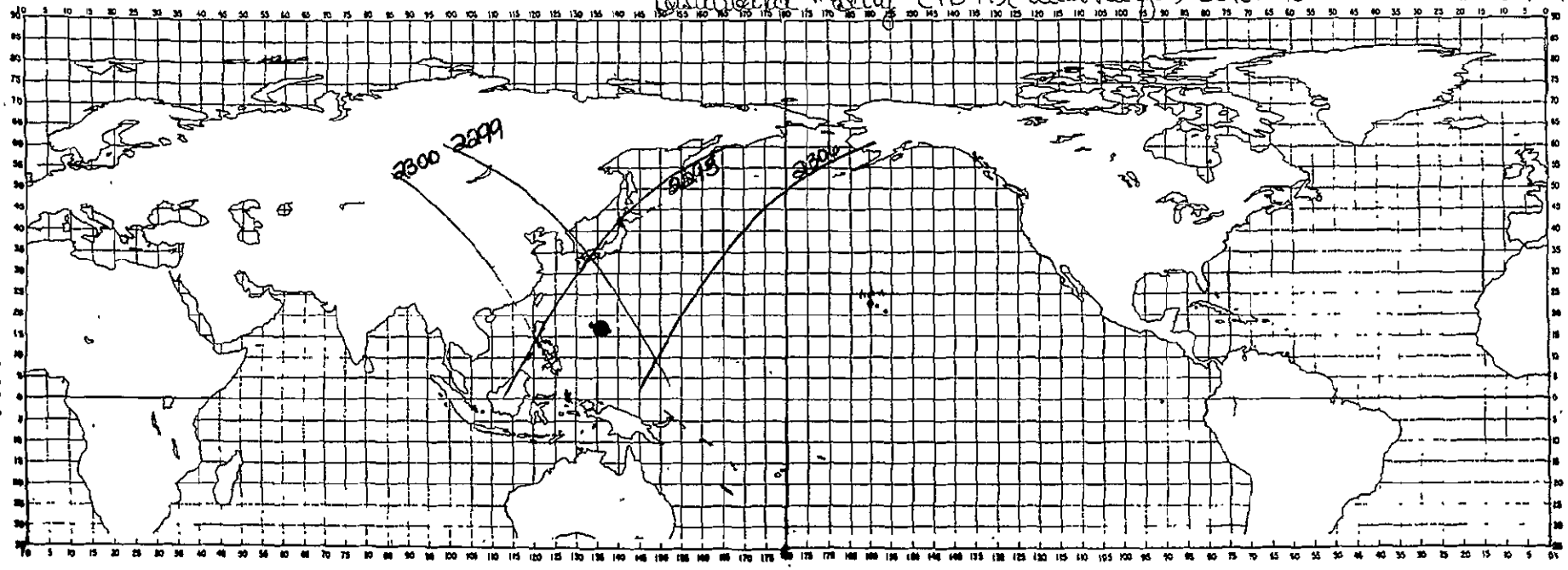
4.16-7

LOCATION

TIME	LATITUDE	LONGITUDE
1029Z	16.8N	137.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2279	-160.20	01 27 20 Z	02 10 Z	No			
2284	173.18	09 56 16 Z	10 04 Z	No			
2285	147.86	11 38 03 Z	11 41 Z	No			
2286	122.54	13 19 30 Z	13 24 Z	No			
2292	-29.40	23 30 32 Z	00 18 Z	No			

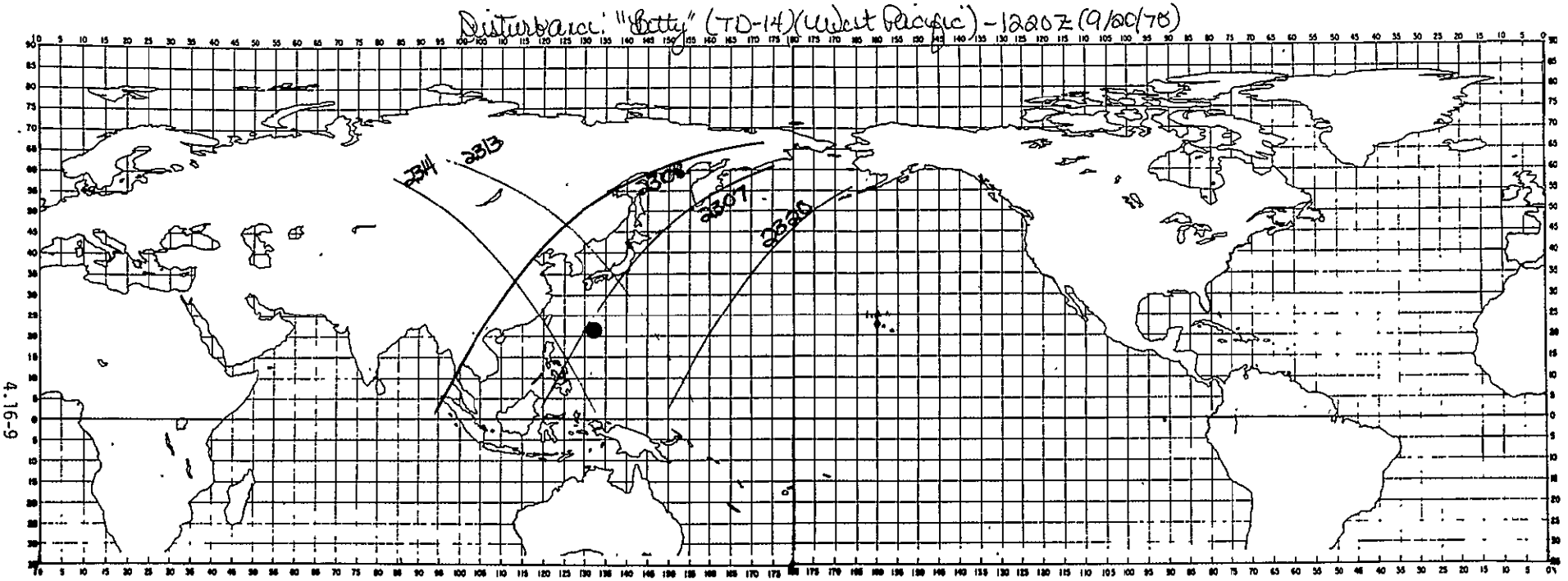
Typhoon "Kathy" (TD-14) (West Pacific) 0040Z to 1133Z to 2333Z (9/19/75)



LOCATION

TIME	LATITUDE	LONGITUDE
0040Z	17.0N	138.3E
1133Z	17.2N	137.0E
2333Z	18.9N	134.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
8893	-54.93	01 12 20 Z	01 56 Z	No			
8899	153.34	11 23 02 Z	11 29 Z	No			
8900	128.01	13 04 42 Z	13 09 Z	No			
9306	-28.93	23 15 32 Z	00 04 Z	No			



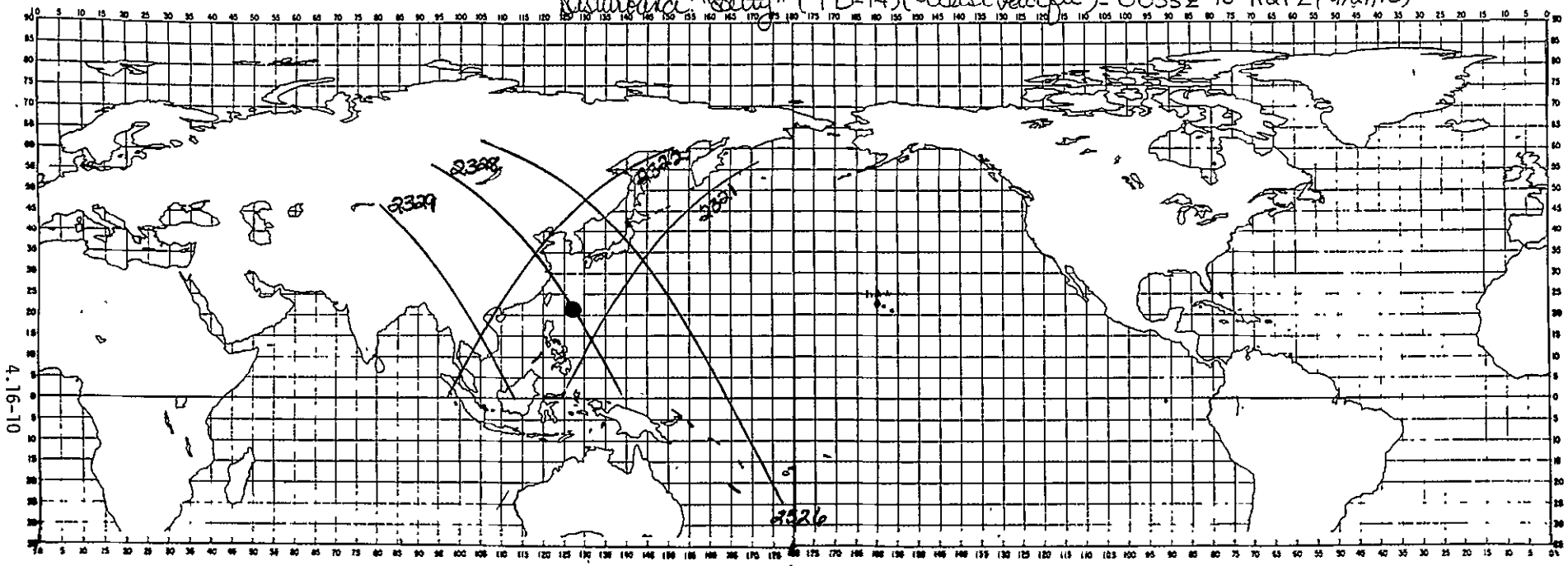
4.16-9

LOCATION

TIME	LATITUDE	LONGITUDE
1220Z	21.5N	131.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2307	-49.25	00 57 19 Z	01 41 Z	No			
2308	-74.57	02 39 05 Z	03 20 Z	No			
2313	168.81	11 08 01 Z	11 17 Z	No			
2314	133.49	12 49 48 Z	12 55 Z	No			
2320	-18.45	23 00 31 Z	23.50 Z	334745	335455	802	551

Disturbance: "Betty" (TD-14)(West Pacific) - 0033Z to 1121Z (9/21/75)



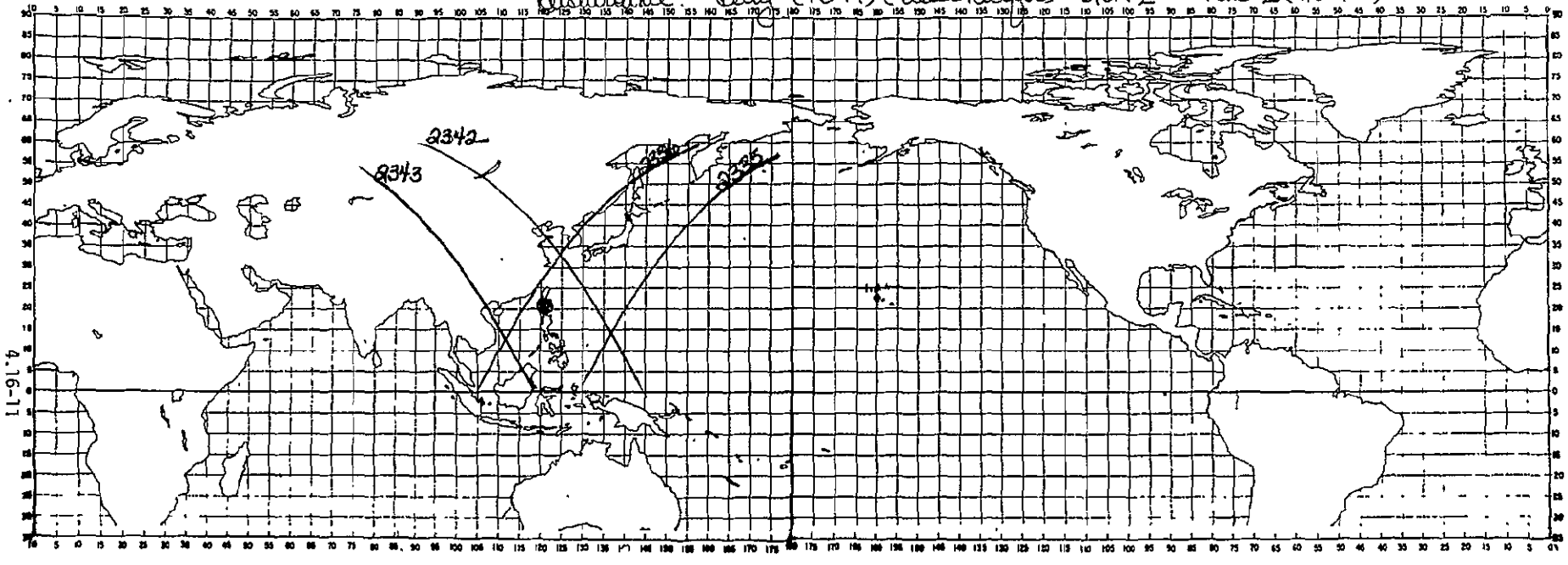
4.16-10

LOCATION

TIME	LATITUDE	LONGITUDE
0033Z	21.4N	129.0E
1121Z	23.2N	125.9E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2321	-43.78	00 42 18 Z	01 28 Z	No			
2322	-69.10	02 24 05 Z	03 06 Z	No			
2326	-170.39	09 11 13 Z	11 03 Z	108457	105129	802	557
2328	138.96	12 34 45 Z	12 42 Z	No			
2329	113.64	14 10 35 Z	14 14 Z	No			

Disturbance "Betty" (TD-14) (West Pacific) - 0127Z to 1215Z (9/22/75)



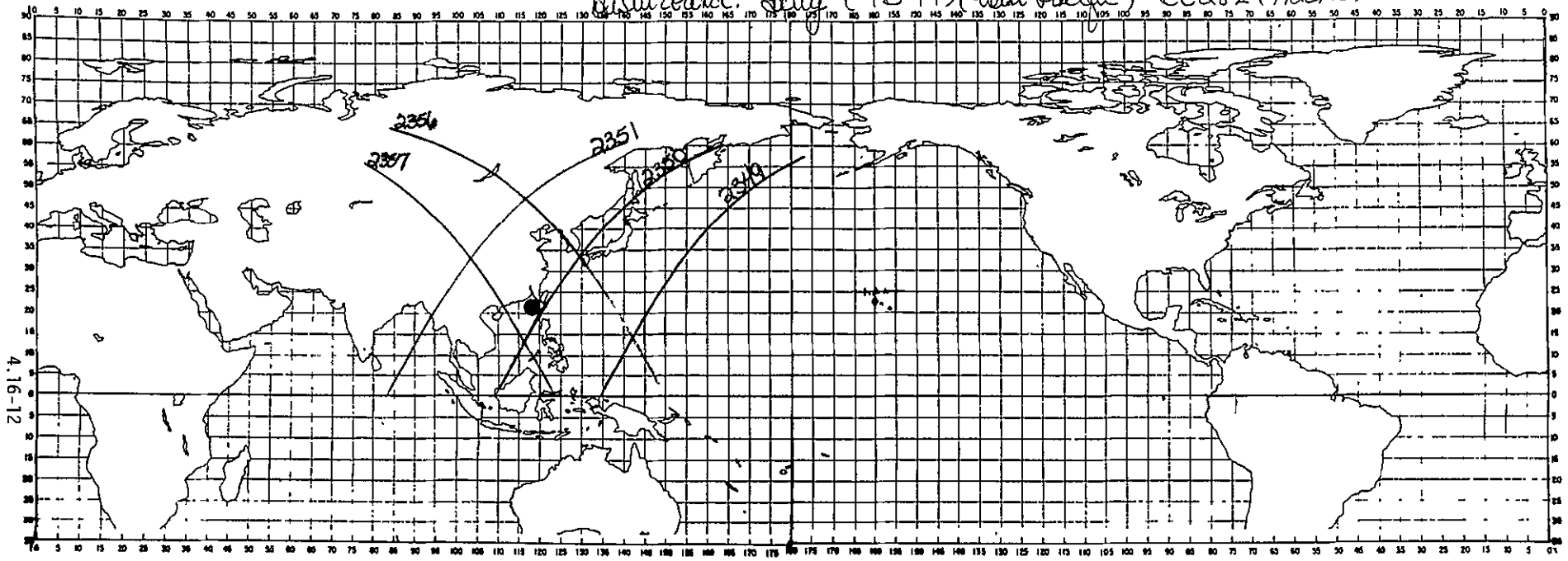
4.16-11

LOCATION

TIME	LATITUDE	LONGITUDE
0127Z	22.2N	123.5E
1215Z	22.5N	120.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ. #
2335	-38.30	00 27 17 Z	01 13 Z	Do			
2336	-63.62	02 09 04 Z	08 53 Z	Do			
2342	144.43	12 10 47 Z	1219 Z	Do			
2343	119.11	14 01 34 Z	14 07 Z	Do			

Disturbance: "Betty" (TD-14) (West Pacific) - CC287 (9/23/75)



4.16-12

LOCATION

TIME	LATITUDE	LONGITUDE
0058Z	22.8 N	119.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2349	-32.83	00 12 17 Z	00 59 Z	No			
2350	-58.15	01 54 04 Z	02 39 Z	No			
2351	-83.48	03 35 51 Z	04 18 Z	No			
2356	149.91	12 04 46 Z	12 14 Z	No			
2357	184.59	13 46 33 Z	13 53 Z	No			

TYPHOON CORA

(October 1 - October 6, 1975)

Meteorological History/Data

Weak troughing in the low level easterlies spawned a disturbance near 10N, 142E on the morning of 29 September, as indicated by satellite and synoptic data. This disturbance drifted west-northwest for the next several days; on 1 October, aircraft reconnaissance reported surface winds of 30 knots.

For the next 24 hours, the 700 mb center was displaced as much as 24 nm to the northwest of the large and diffuse surface center. This center had a diameter as large as 80 nm with weak temperature and pressure gradients, and correspondingly light winds. From initial detection until the evening of the 3rd, development of a good outflow channel to the west and northwest was restricted by an upper tropospheric trough to the west. Despite this lack of outflow, the storm continued to develop. Cora was upgraded to typhoon strength on the 3rd when aircraft reconnaissance reported 70-knot surface winds and a closed wall cloud. The system continued to lack good vertical structure through the evening of the 3rd when the 700 mb center was still displaced east of the surface center.

For the first 48 hours, Cora was situated between two large high pressure cells and moved toward the northwest at 13 knots. On the 3rd, the high pressure cell north of Taiwan began to weaken rapidly and collapsed. Strong ridging was now building to the east of Cora. At this time, Cora began to slow down prior to a gradual recurvature near 25N.

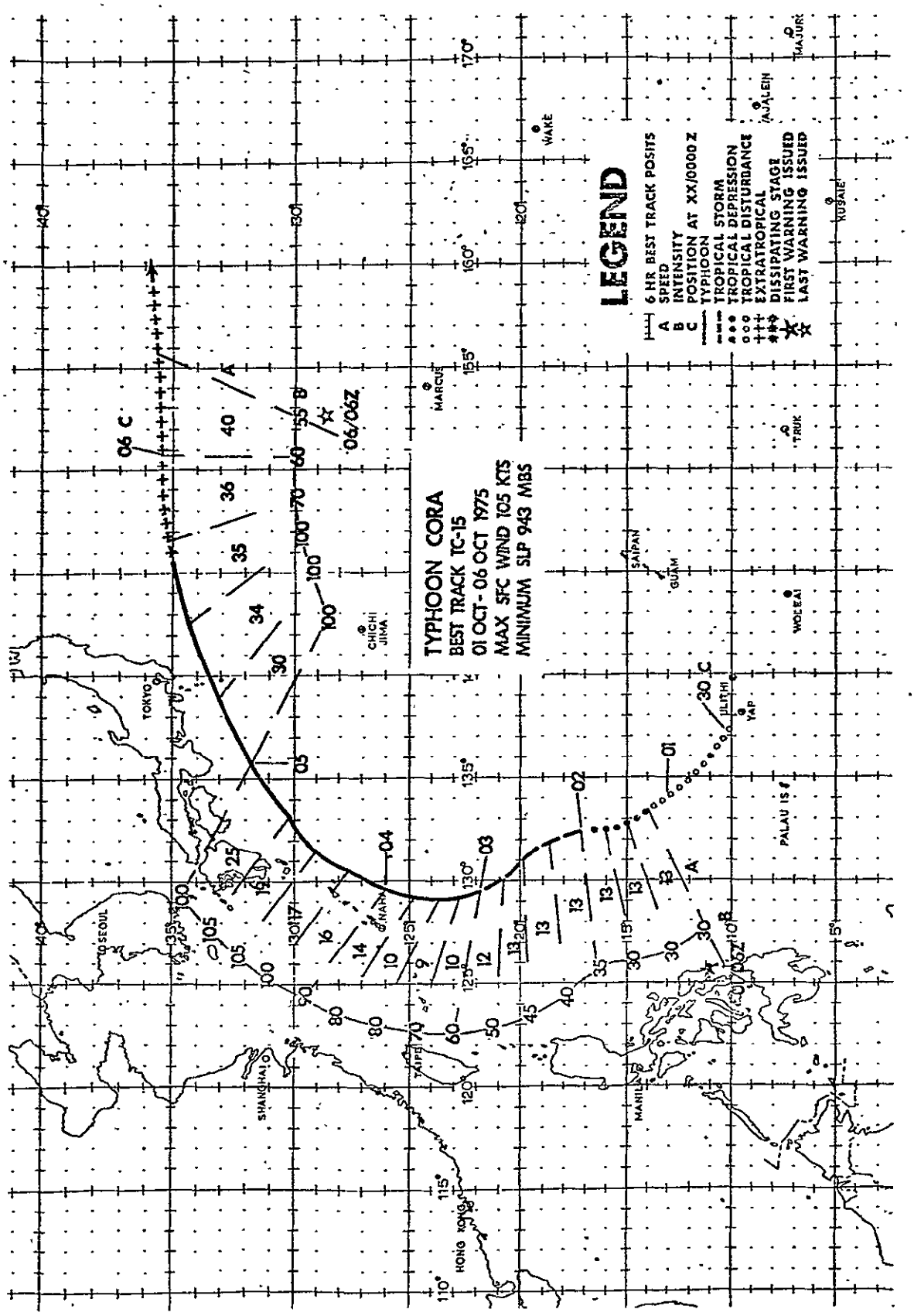
As Cora passed 100 nm to the east of Okinawa on the morning of the 4th, Kadena AB recorded a peak gust of 31 knots. The system now began a gradual acceleration as it entered an area of strong westerlies to the northeast of the high pressure cell. That evening Cora attained a minimum central pressure of 943 mb and maximum sustained surface winds of 105 knots. Both satellite and synoptic data indicated excellent outflow in all quadrants except the northwest where a minor trough was still restricting the outflow.

By the morning of the 5th, satellite and synoptic data indicated that the primary upper-level outflow was not confined to the north-northeast. Although Cora was in an area of strong vertical shear, typhoon strength winds were still maintained for the next 24 hours. Moving to the northeast at 30 knots, the typhoon continued to come into increasingly strong westerly steering flow. Cora passed 120 nm south-southeast of Tokyo on the evening of the 5th.

Satellite data on the 6th indicated that there was very little upper-level outflow, but an apparent low-level circulation was still visible. The remains of Cora were now moving to the east at 40 knots as an extratropical system with surface winds of 55 knots.

Damage Estimates

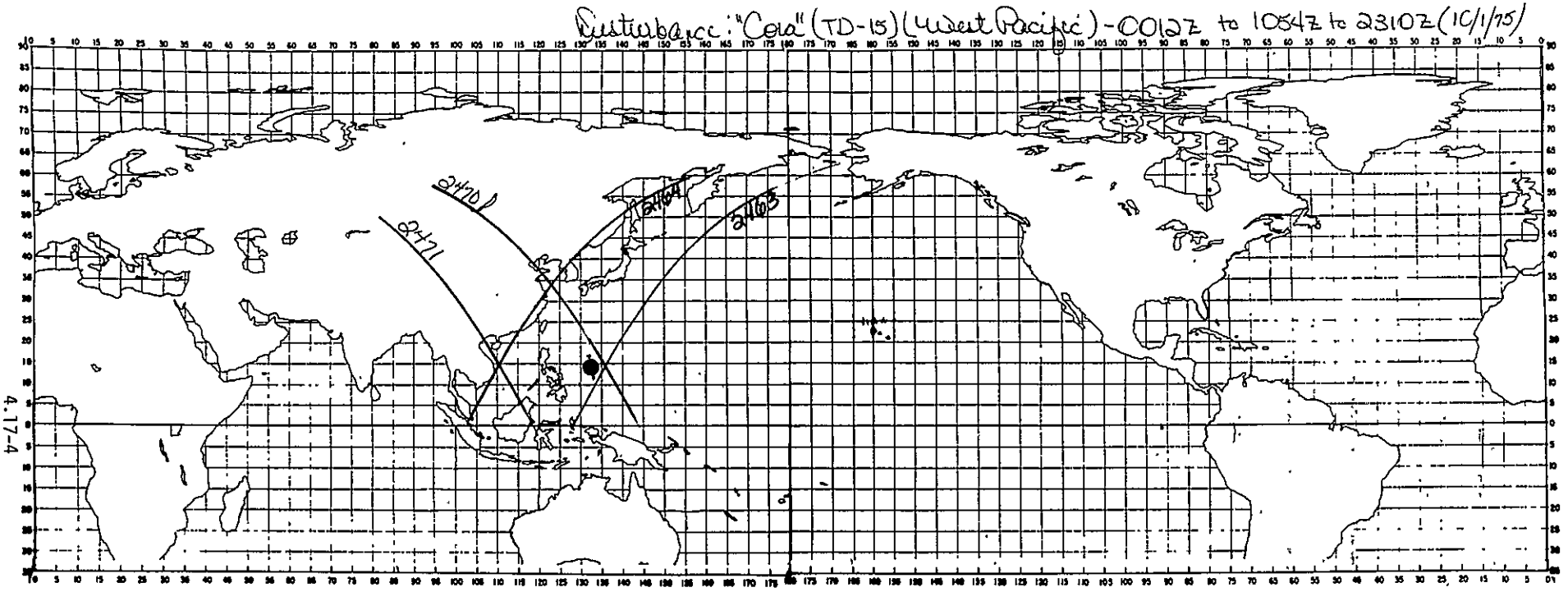
Unknown.



DISTURBANCE: "CORA" TD-15: (WESTERN PACIFIC)

DATE: OCTOBER 1 - OCTOBER 6, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
10/1	0012Z 1054Z 2310Z	12.5N 15.0 17.0	133.5E 133.5 132.8			
10/2	1150Z	19.7N	130.8E			
10/3	0004Z 1051Z	21.5N 23.9	129.0E 128.8			Typhoon
10/4	0058Z 1148Z 2356Z	26.3N 29.2 31.7	? E 131.2 135.8	943	105	Typhoon
10/5	1249Z 2255Z	34.0N 35.5	142.0E 151.0			Extratropical
10/6	0951Z	37.5N	157.0E		55	Extratropical



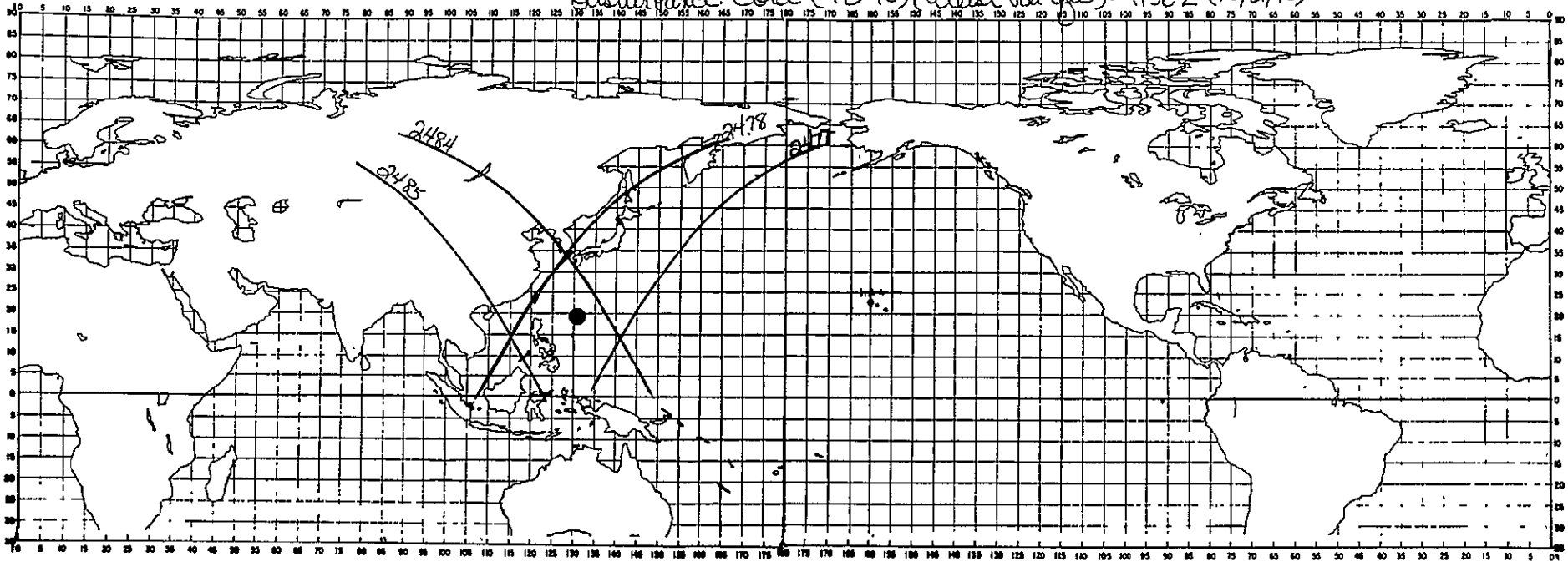
4.17-4

LOCATION

TIME	LATITUDE	LONGITUDE
0012Z	12.5N	133.5E
1054Z	15.0N	133.5E
2310Z	17.0N	132.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2463	-39.68	01 35 44 Z	02 23 Z	No			
2464	-69.01	03 17 32 Z	04 02 Z	No			
2470	143.06	13 28 14 Z	13 33 Z	No			
2471	117.73	15 10 01 Z	15 12 Z	No			

Sustained: "Cora" (TD-15) (West Pacific) - 1150Z (10/2/75)

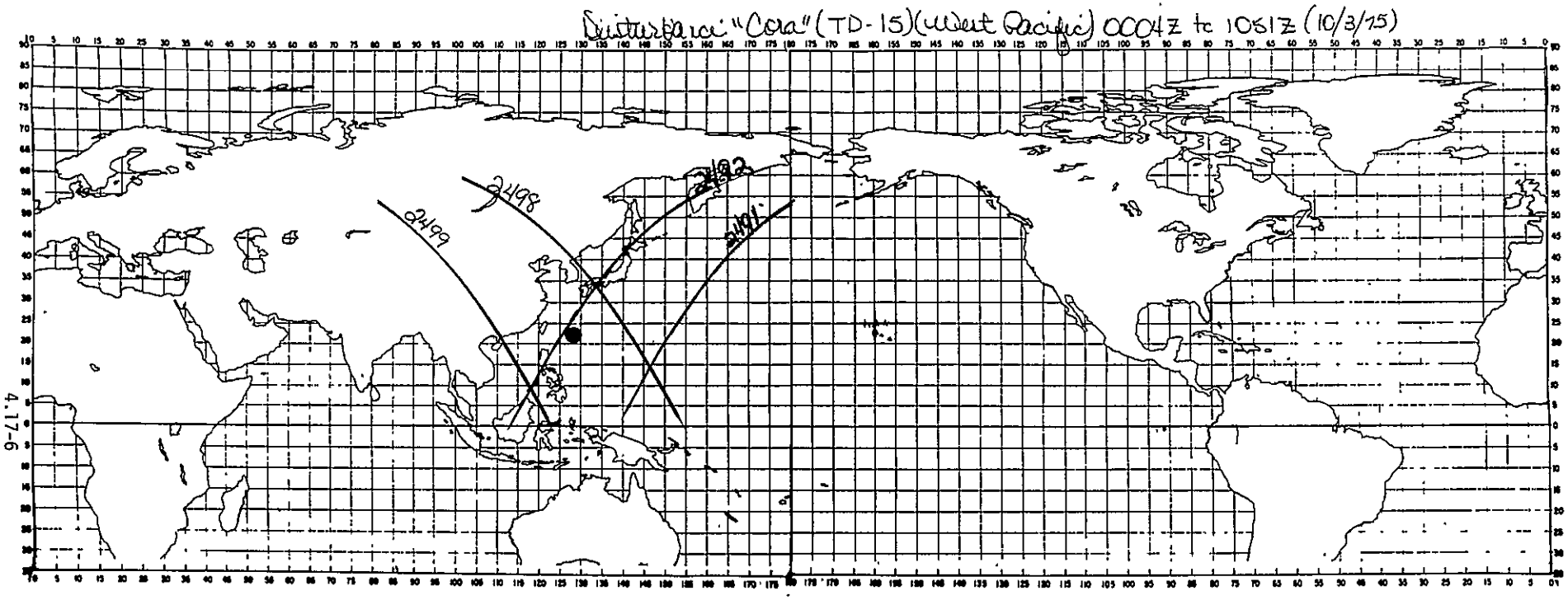


4.17-5

LOCATION

TIME	LATITUDE	LONGITUDE
1150Z	9.7N	130.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2477	-34.21	01 20 44 Z	0207Z	No			
2478	-59.53	03 02 31 Z	0347Z	No			
2484	148.53	13 13 13 Z	1320Z	No			
2485	123.21	14 55 00 Z	1458Z	No			

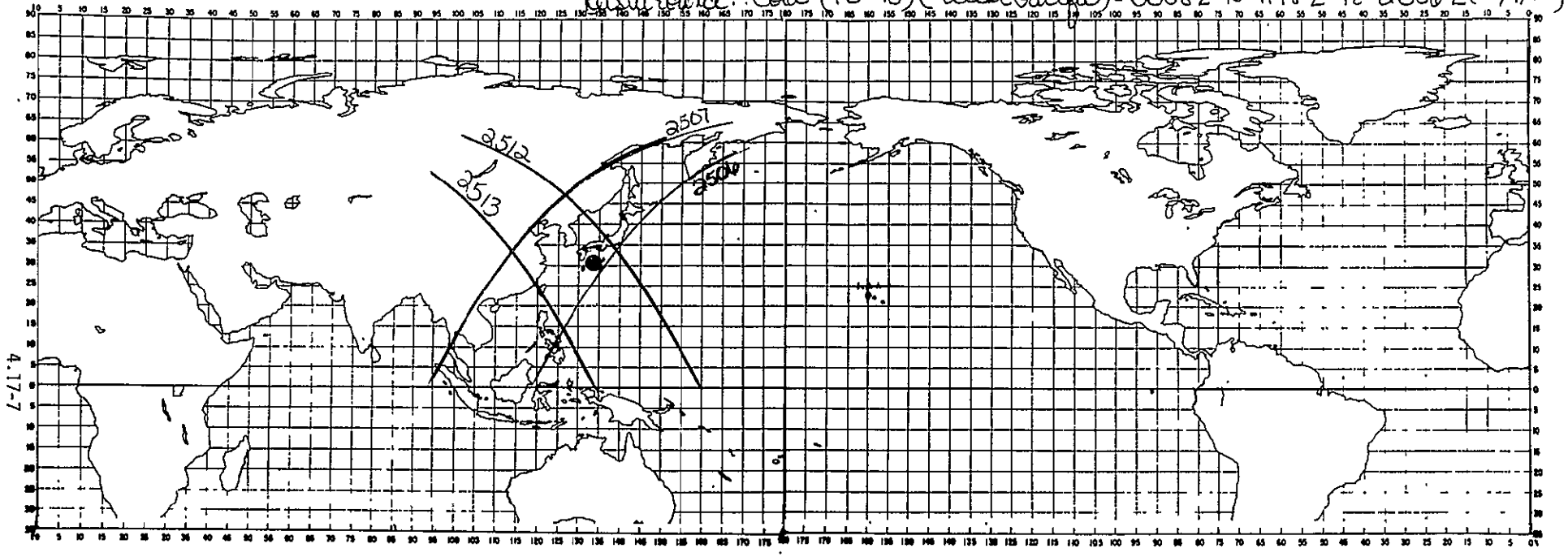


LOCATION

TIME	LATITUDE	LONGITUDE
0004Z	21.5N	129.0E
1051Z	23.9N	128.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2491	-28.73	01 05 43 Z	01 52 Z	No			
2492	-54.06	02 47 30 Z	03 31 Z	No			
2498	154.01	12 58 12 Z	13 07 Z	No			
2499	123.68	14 40 00 Z	14 45 Z	No			

Tiros Voyager: "Cora" (TD-15) (West Pacific) - 0058Z to 1148Z to 2356Z (10/4/75)

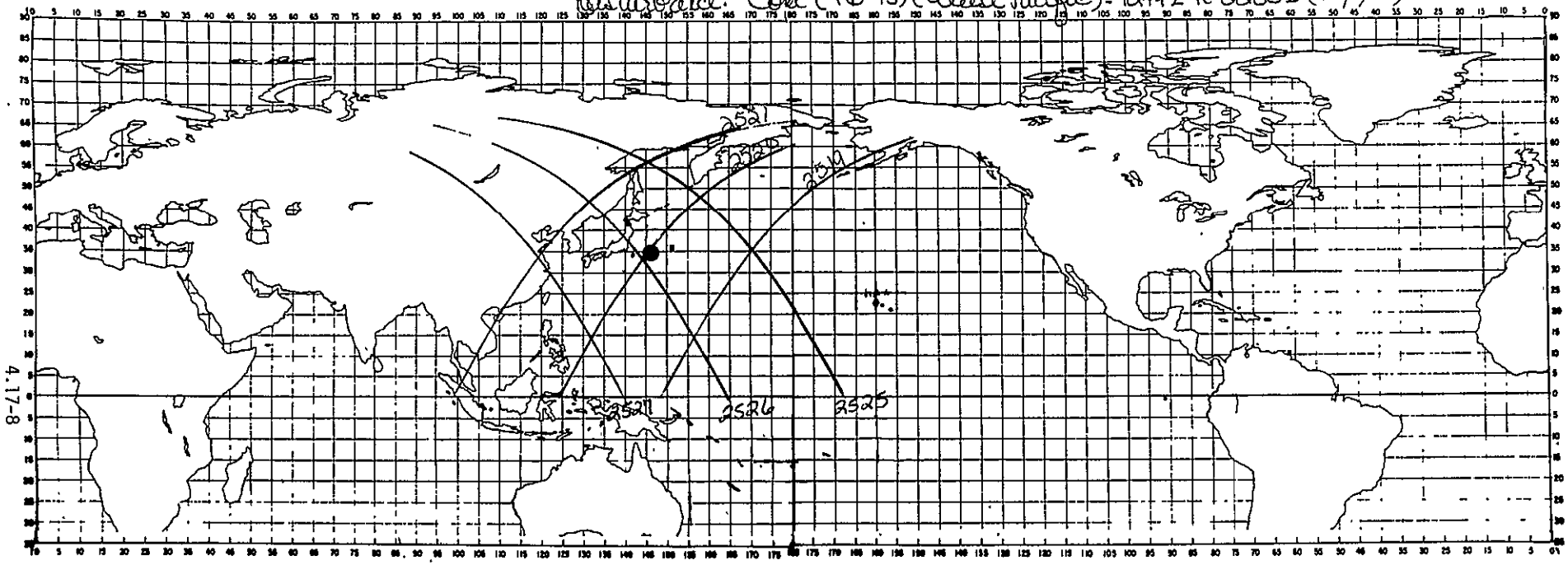


4.17-7

LOCATION

TIME	LATITUDE	LONGITUDE
0058Z	26.3N	8E
1148Z	29.2N	131.2E
2356Z	31.7N	135.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2506	-48.58	02 32 29 Z	03 14 Z	No			
2507	-73.90	04 14 16 Z	04.53 Z	No			
2512	159 49	12 43 11 Z	12 53 Z	No			
2513	134.17	14 24 58 Z	14 32 Z	No			

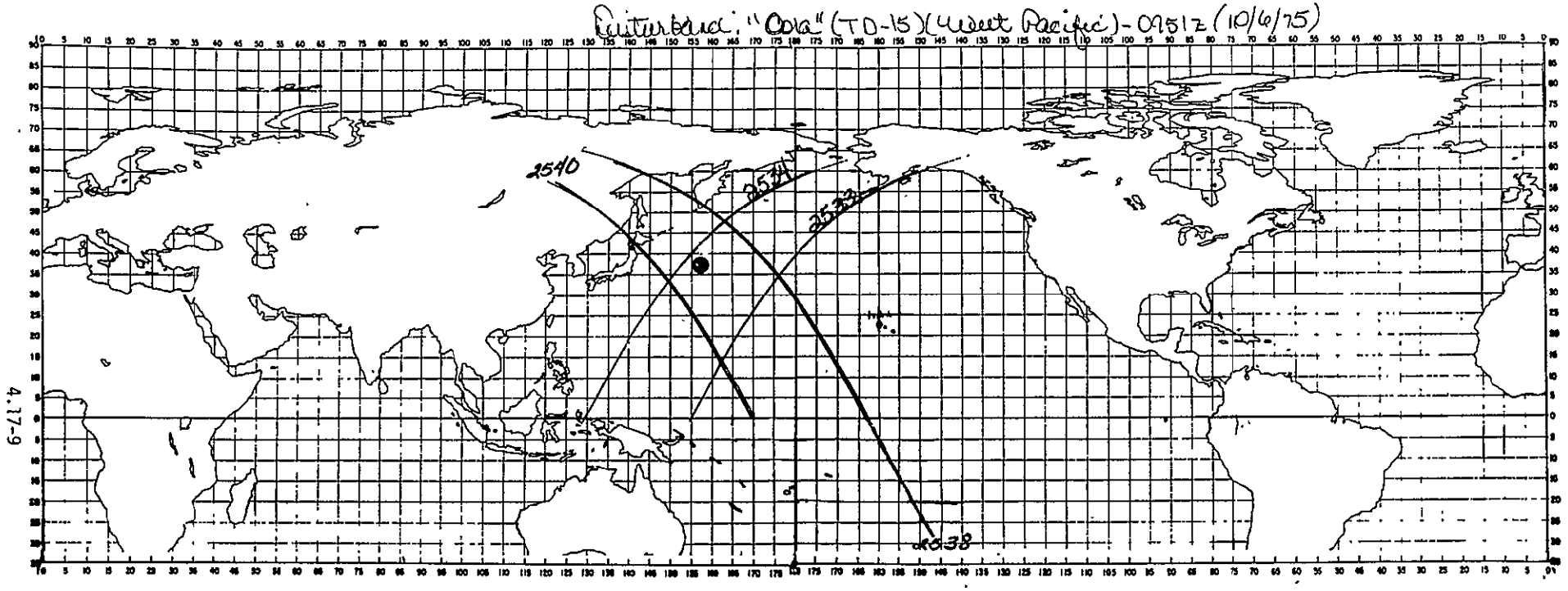


4.17-8

LOCATION

TIME	LATITUDE	LONGITUDE
1249Z	34.0N	142.0E
2255Z	35.5N	151.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2519	-17.77	00 35 41 Z	01 19 Z	010603	013308	802	197
2520	-43.09	02 17 28 Z	02 57 Z	No			
2521	-68.42	03 59 15 Z	04 34 Z	No			
2525	169.71	10 46 23 Z	11 01 Z	No			
2526	164.97	12 28 10 Z	12 38 Z	No			
2527	139.64	14 09 57 Z	14 17 Z	No			



4.17-9

LOCATION

TIME	LATITUDE	LONGITUDE
0951Z	37.5N	157.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2533	-12.30	00 20 40 Z	01 03 Z	No			
2534	-37.62	02 02 27 Z	02 41 Z	No			
2538	-138.91	08 49 35 Z	10 45 Z	102049	102301	802	226
2540	170.44	12 13 10 Z	12 23 Z	No			

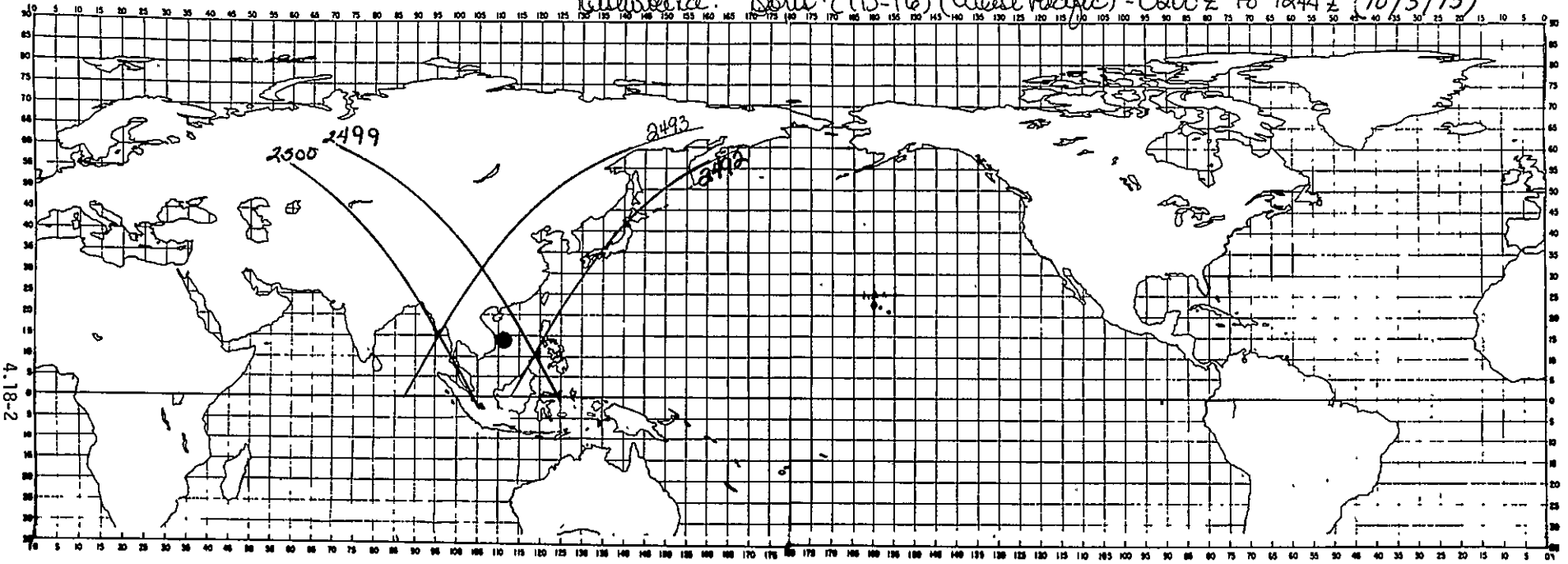
DISTURBANCE: "DORIS" (TD-16) (WESTERN PACIFIC)

DATE: OCTOBER 3 - OCTOBER 6, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
10/3	0200Z 1244Z	14.0N 15.0	111.0E 111.0			
10/4	0101Z 1339Z	16.6N 17.8	111.6E 112.6			
10/5	0155 1245	18.8N 21.0	112.7E 113.1			
10/6	0055	23.0N (Over Land)	113.0E			

NOTE: See track map, page 4.1-7.

Disturbance: "Dori" (TD-16) (West Pacific) - 0200Z to 1244Z (10/3/75)



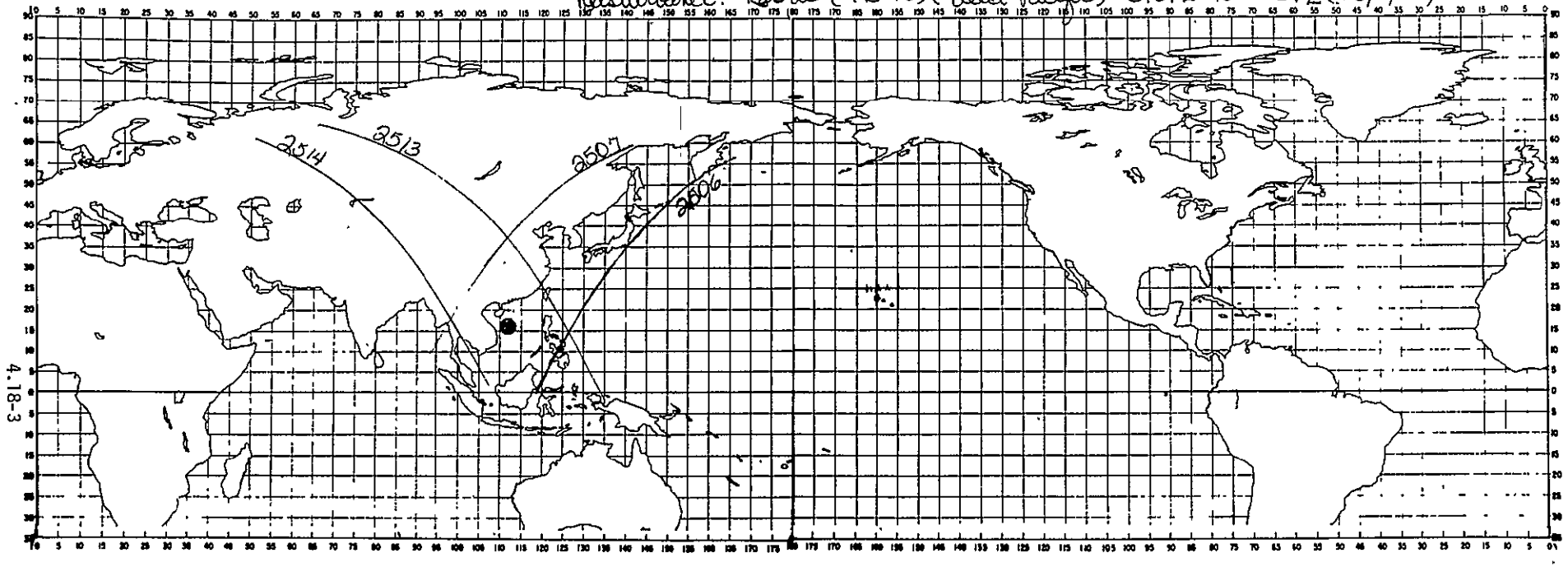
4.18-2

LOCATION

TIME	LATITUDE	LONGITUDE
0200Z	14 ON	111.0E
1244Z	15 ON	111.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2492	-54.06	02 47 30 Z	03 35 Z	Do			
2493	-79.33	04 29 17 Z	05 14 Z	Do			
2499	123.68	14 40 00 Z	14 45 Z	Do			
2500	103.36	16 21 47 Z	16 25 Z	Do			

Disturbance: "Dori" (TD-16) (West Pacific) - 0101Z to 1339Z (10/4/75)



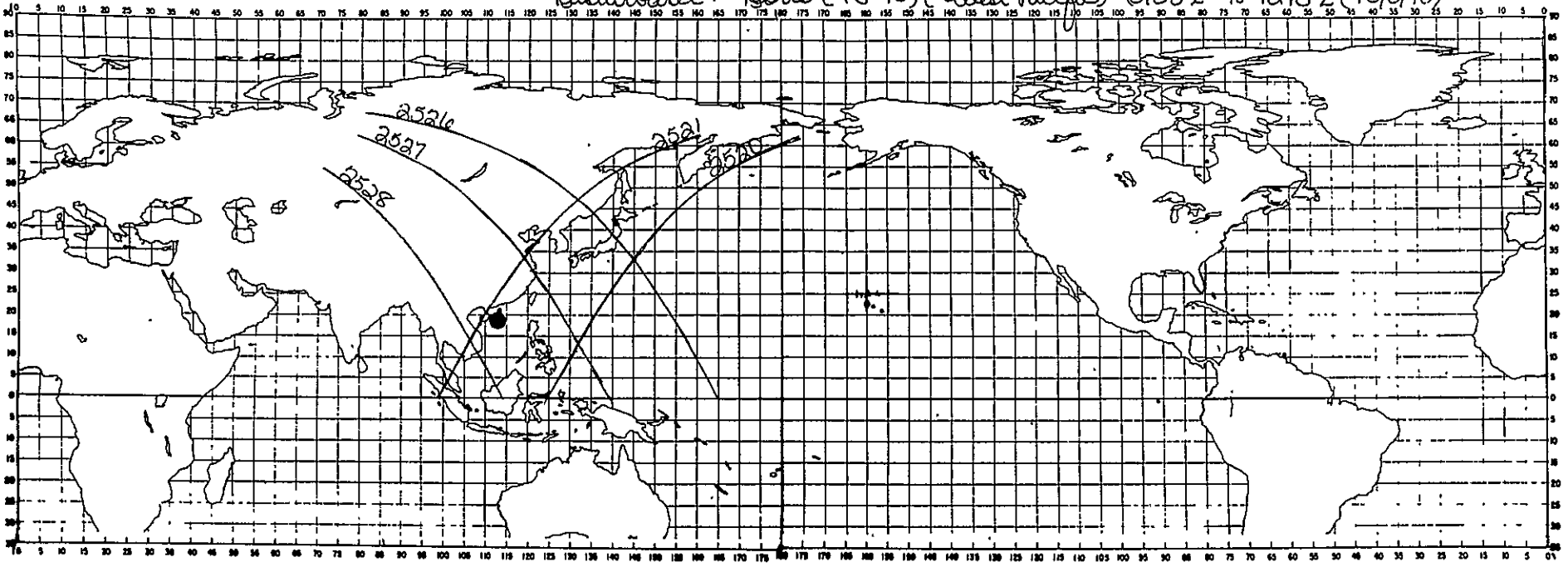
4.18-3

LOCATION

TIME	LATITUDE	LONGITUDE
0101Z	16.6N	111.6E
1339Z	17.8N	112.6E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2506	-48.58	02 32 29 Z	03 17 Z	Do			
2507	-78.90	04 14 16 Z	05 01 Z	Do			
2513	134.17	14 24 58 Z	14 31 Z	Do			
2514	108.85	16 06 45 Z	16 11 Z	Do			

Disturbance: "Doris" (TD-16) (West Pacific) - 0155Z to 1845Z (10/5/75)



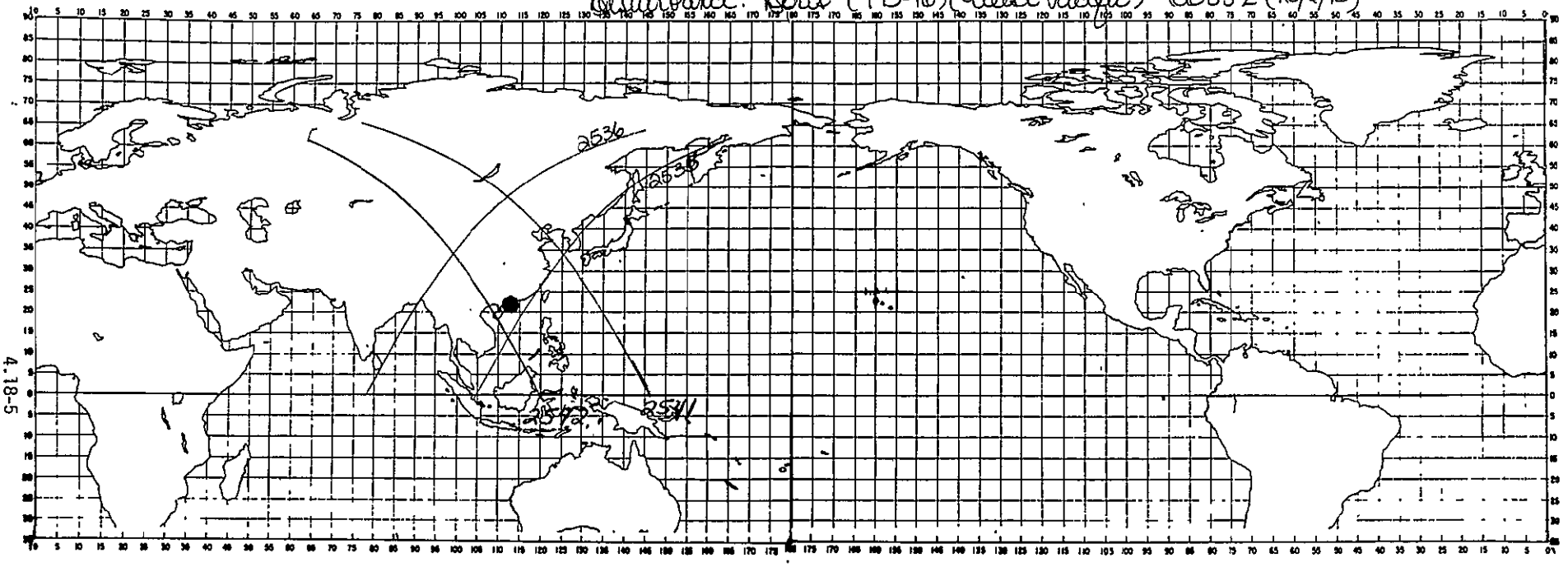
4.18-4

LOCATION

TIME	LATITUDE	LONGITUDE
0155Z	18.8N	112.7E
1845Z	21.0N	113.1E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2520	-43.09	02 17 28 Z	03 03 Z	Do			
2521	-68.42	03 59 15 Z	04 44 Z	Do			
2526	164.97	12 28 10 Z	12 38 Z	Do			
2527	139.64	14 09 57 Z	14 18 Z	Do			
2528	114.32	15 51 45 Z	15 57 Z	Do			

Disturbance: "Doris" (TD-16) (West Pacific) - 0055 Z (10/6/75)



4.18-5

LOCATION

TIME	LATITUDE	LONGITUDE
0055Z	23.0N	113.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2535	-62.94	03 44 14 Z	04 28 Z	Do			
2536	-88.26	05 26 01 Z	06 08 Z	Do			
2541	145.12	13 54 57 Z	14 05 Z	Do			
2542	119.79	15 36 44 Z	15 43 Z	Do			

TYPHOON ELSIE

(October 8 - October 15, 1975)

Meteorological History/Data

By the 6th of October, the monsoonal trough had become quite active and was oriented east-west along 8N from the Philippines to 160E. Typhoon Elsie developed in this trough with a well-defined surface circulation located approximately 250 nm southwest of Guam on the 8th. The first warning was issued on the morning of the 9th and Elsie attained typhoon strength 48 hours later. At this point, Elsie began slowing down as the storm approached the western extent of the mid-tropospheric subtropical ridge.

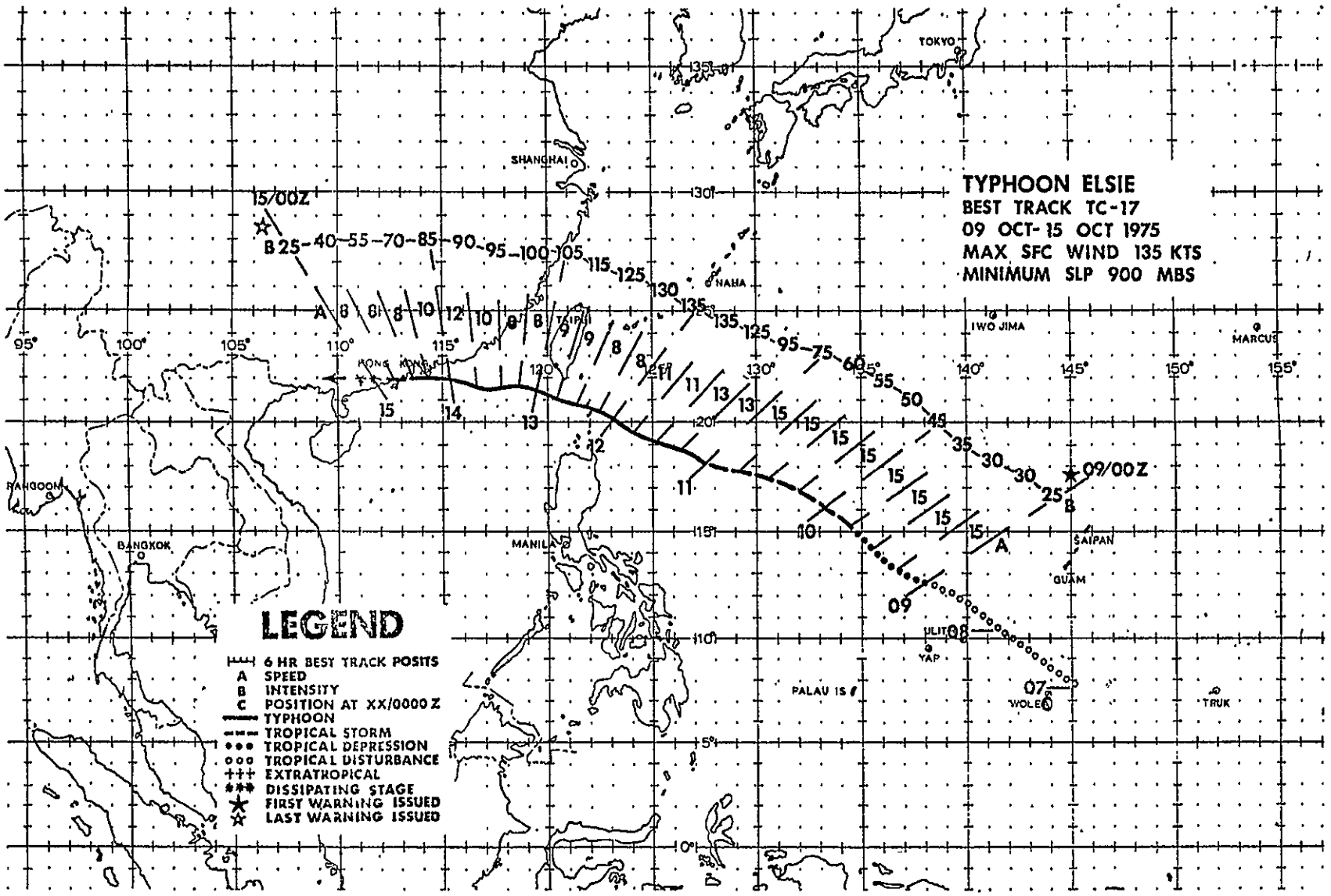
Elsie then underwent explosive deepening and aircraft reconnaissance recorded a 69 mb drop in the central pressure at the typhoon center between the 102052Z and 111430Z fixes. The maximum surface winds increased from 65 knots to 135 knots during this period.

As Elsie approached the Bashi Channel, Basco, in the Bataan Islands (WMO station 98135, elev 184 ft), 40 nm east of Elsie's center, reported maximum sustained winds of 65 knots. Elsie continued moving west-northwest through the Bataan Islands on the 12th. As the subtropical ridge then built westward, Elsie began a more westerly track into the South China Sea. As the typhoon entered the South China Sea, it began to weaken with inflow restricted to the north by the Asian continent. Still, the Royal Observatory, Hong Kong, reported that typhoon Elsie was one of the most intense typhoons ever to affect Hong Kong in the month of October. Royal Observatory radar began tracking the storm by late afternoon on the 13th and Elsie passed 35 nm to the south of Hong Kong on the 14th. At that time the maximum sustained winds recorded at Hong Kong were 70 knots with gusts up to 118 knots. The lowest pressure recorded in Hong Kong was 987.5 mb.

After passing south of Hong Kong, Elsie continued westward, making landfall on the southern China coast at approximately 1500Z on the 14th. Elsie then dissipated rapidly over the Asian mainland.

Damage Estimates

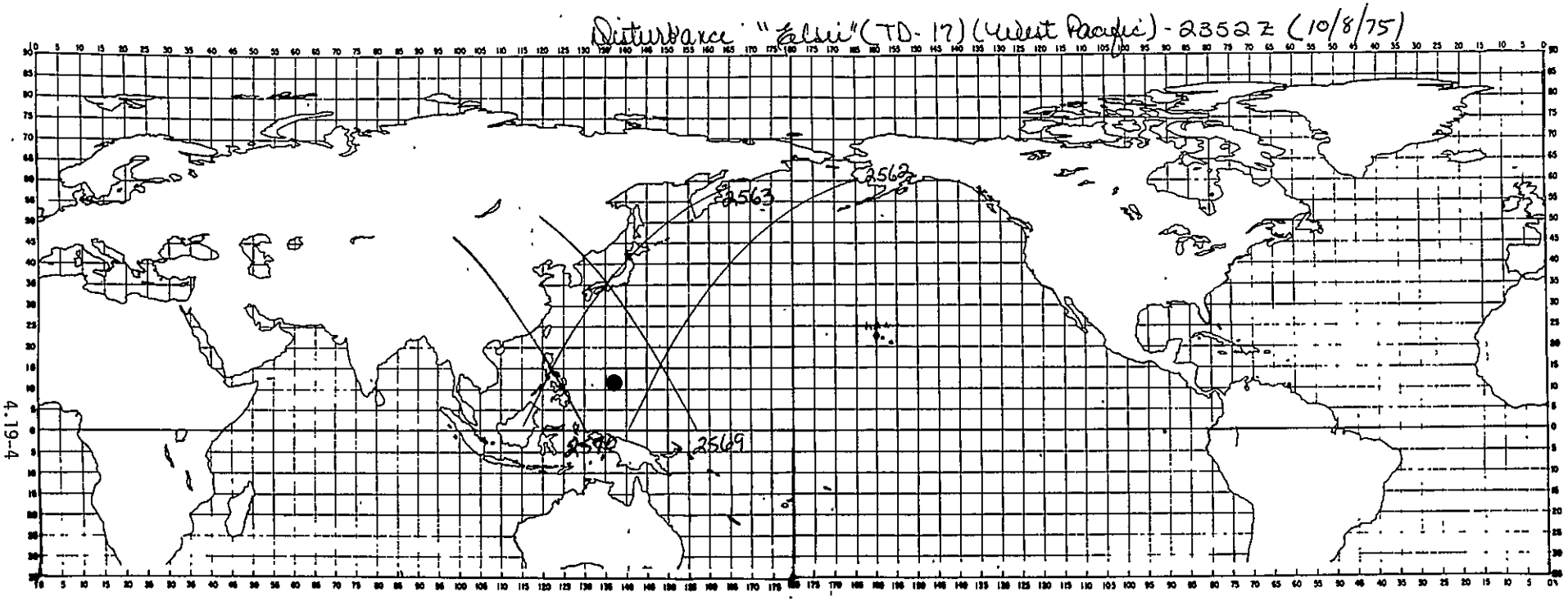
Fortunately, the maximum winds occured at a low tide, thus reducing flooding. Seven ocean-going vessels drifted from their moorings and one small craft and a fishing junk capsized. There were no fatalities reported, but 46 people were injured by flying debris.


TYPHOON ELSIE
BEST TRACK TC-17
09 OCT-15 OCT 1975
MAX SFC WIND 135 KTS
MINIMUM SLP 900 MBS
15/00Z
09/00Z
LEGEND
6 HR BEST TRACK POSITS
A SPEED
B INTENSITY
C POSITION AT XX/0000Z
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
TOKYO
SHANGHAI
NAHA
IWO JIMA
MARCUS
HONG KONG
TAIPEI
MANILA
SAIPAN
GUAM
YAP
ULITHI
WOLEAI
PALAU IS
TRUK
BANGKOK
RANGOON

DISTURBANCE: 'ELSIE" TD-17; (WESTERN PACIFIC)

DATE: OCTOBER 8 - OCTOBER 15, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
10/8	2352Z	12.0N	137.8E			
10/9	1034Z	14.5N	135.5E			
10/10	0045Z	16.0N	133.4E			
	1129Z	18.5	130.5			
	2346Z	17.9	127.7			
10/11	1225Z	19.5N	124.8E		75	Typhoon
10/12	0039Z	20.3N	122.9E		135	Super Typhoon
	1320Z	21.3	120.5			
10/13	0135Z	21.6N	118.7E			
	1221Z	21.6	117.2			
10/14	0035Z	21.8N	115.1E			
	1316Z	22.0	113.7			
10/15	?	23.0N	111.0W			
		(Over Land)				

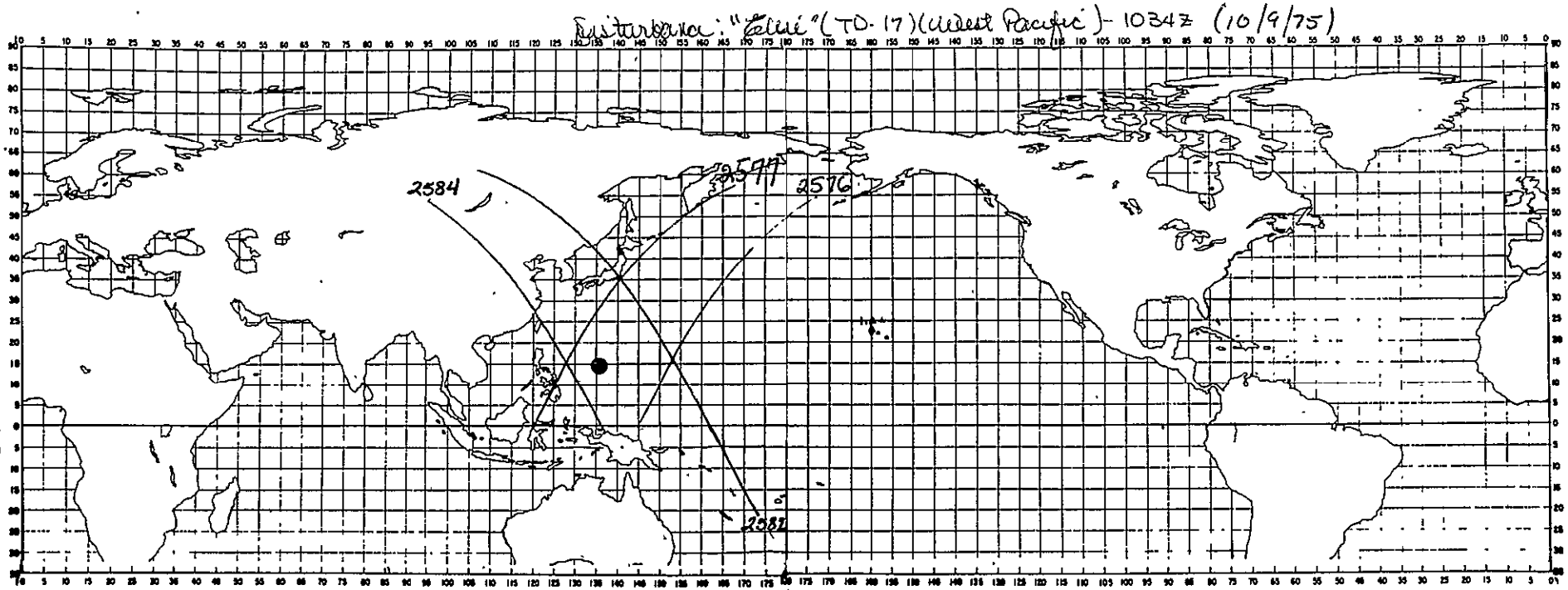


4.19-4

LOCATION

TIME	LATITUDE	LONGITUDE
2352Z	12 ON	137.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2562	-26.67	01 32 25 Z	02 21 Z	021717	022808	802	251
2563	-52.00	03 14 13 Z	03 59 Z	No			
2569	+156.07	13 24 55 Z	13 30 Z	No			
2570	+130.74	15 06 42 Z	15 09 Z	No			



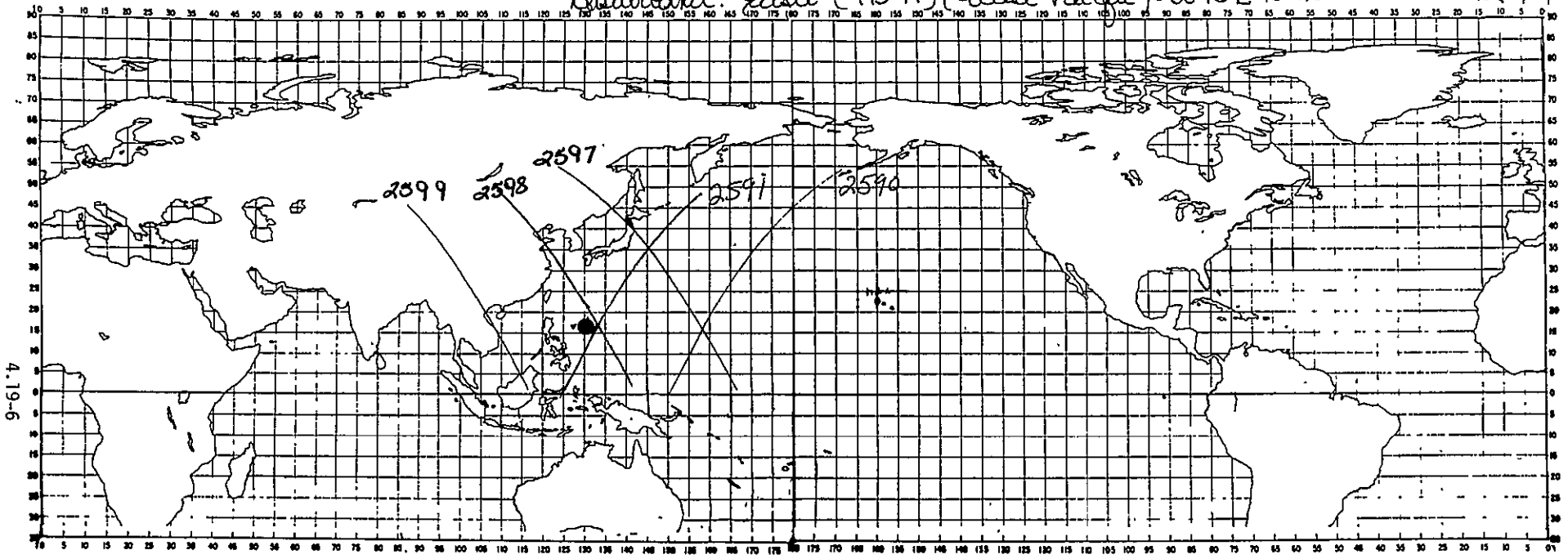
4.19-5

LOCATION

TIME	LATITUDE	LONGITUDE
1034Z	14.5N	136.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2576	-21.20	01 17 25 Z	02 05 Z	Do			
2577	-46.52	02 59 12 Z	03 45 Z	Do			
2582	-173.14	11 28 07 Z	13 17 Z	131155	131935	802	275
2584	+136.22	14 51 41 Z	14 54 Z	Do			

Disturbance: "Elsie" (TD-17) (West Pacific) - 0045Z to 1129Z to 2346Z (10/10/75)

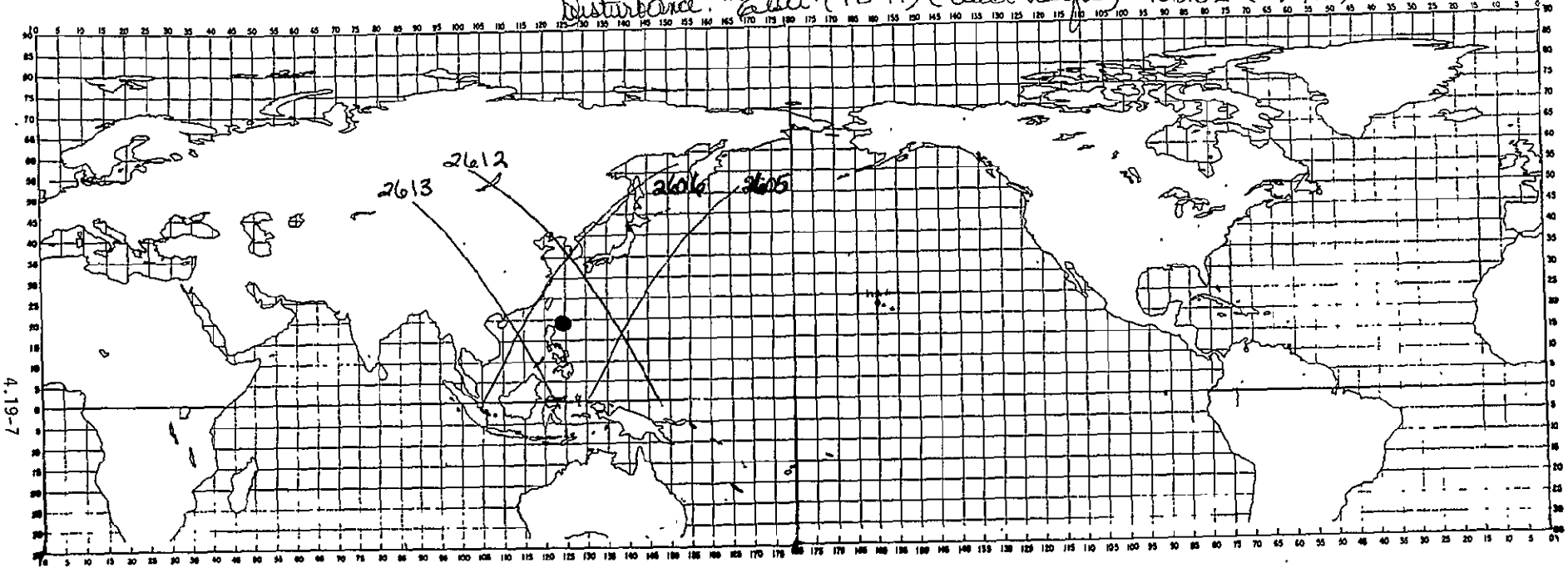


4.19-6

LOCATION

TIME	LATITUDE	LONGITUDE
0045Z	16.0N	133.4E
1129Z	18.5N	130.5E
2346Z	17.9N	127.7E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2590	-15.72	01 02 24 Z	01 52 Z	015025	015849	802	281
2591	-41.05	02 44 11 Z	03 31 Z	Do			
2597	+167.02	12 54 53 Z	13 04 Z	Do			
2598	+141.09	14 36 41 Z	14 43 Z	Do			
2599	+116.37	16 18 28 Z	16 20 Z	Do			



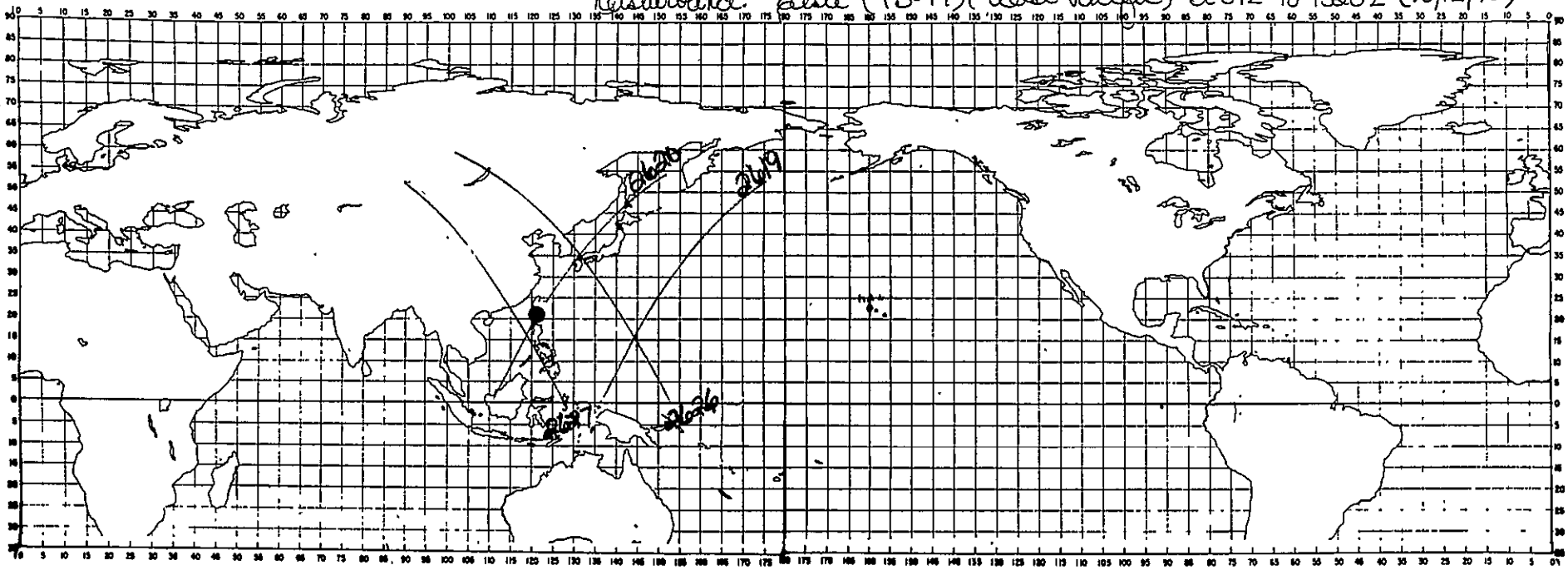
4.19-7

LOCATION

TIME	LATITUDE	LONGITUDE
1225Z	19.5N	104.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2605	-35.57	02 29 10 Z	03 16 Z	031143	032332	802	302
2606	-60.90	04 10 57 Z	04 55 Z	No			
2612	+147.16	14 21 40 Z	14 29 Z	No			
2613	+121.84	16 03 27 Z	16 07 Z	No			

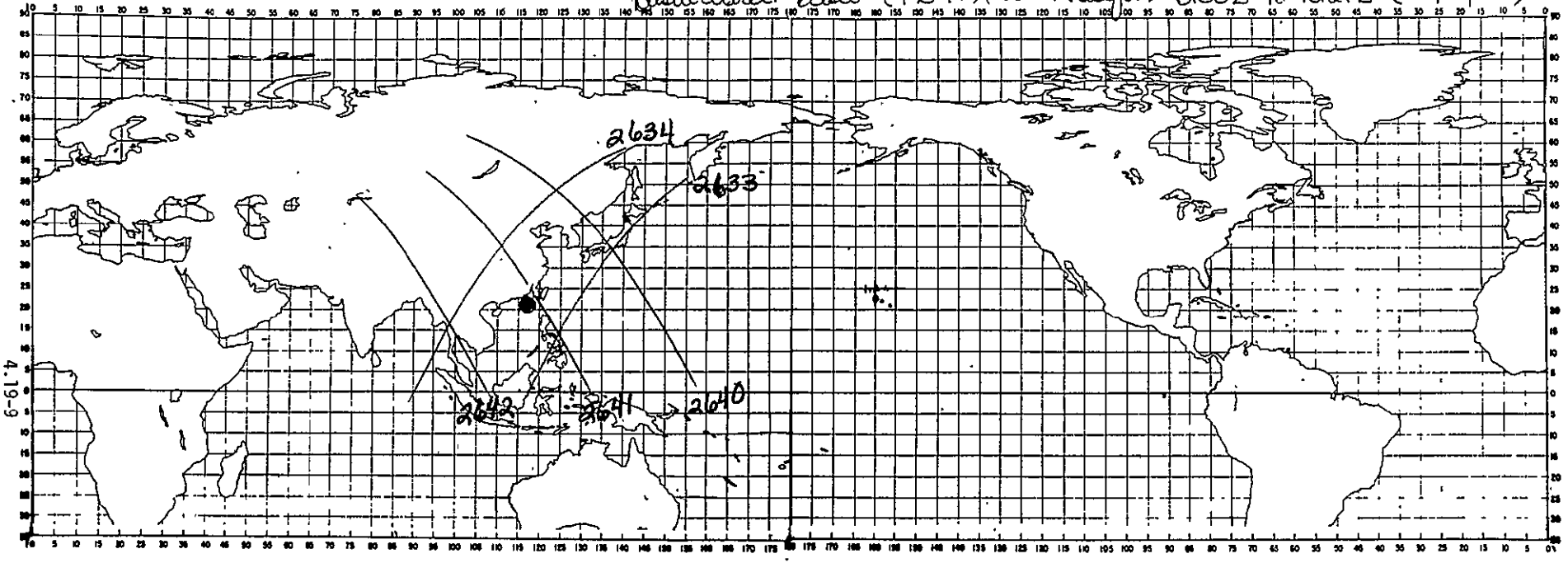
Disturbance "Elsie" (TD-17) (West Pacific) - CC39Z to 1320Z (10/12/75)



LOCATION

TIME	LATITUDE	LONGITUDE
CC39Z	20.3N	122.9E
1320Z	21.3N	120.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2619	-30.10	02 14 09 Z	03 02 Z	025806	030919	802	317
2620	-55.42	03 55 56 Z	04 41 Z	No			
2626	+152.04	14 06 39 Z	14 16 Z	No			
2627	+127.32	15 48 26 Z	15 54 Z	No			

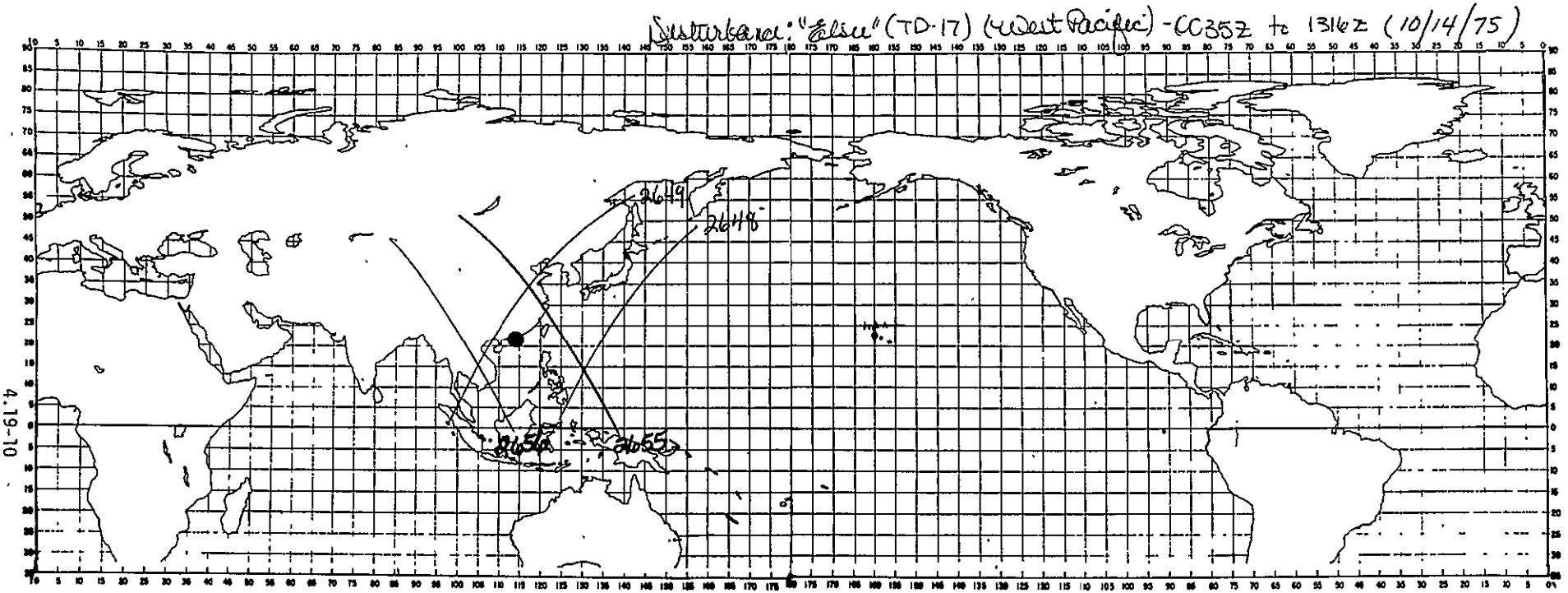


4.19-9

LOCATION

TIME	LATITUDE	LONGITUDE
0135Z	21.6N	118.7E
1221Z	21.6N	117.2E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2633	-49.95	03 40 56 Z	04 27 Z	Do			
2634	-75.27	05 22 43 Z	06 06 Z	Do			
2640	+158.11	13 51 38 Z	14 02 Z	Do			
2641	+132.79	15 33 25 Z	15 40 Z	Do			
2642	+107.47	17 15 12 Z	17 20 Z	Do			

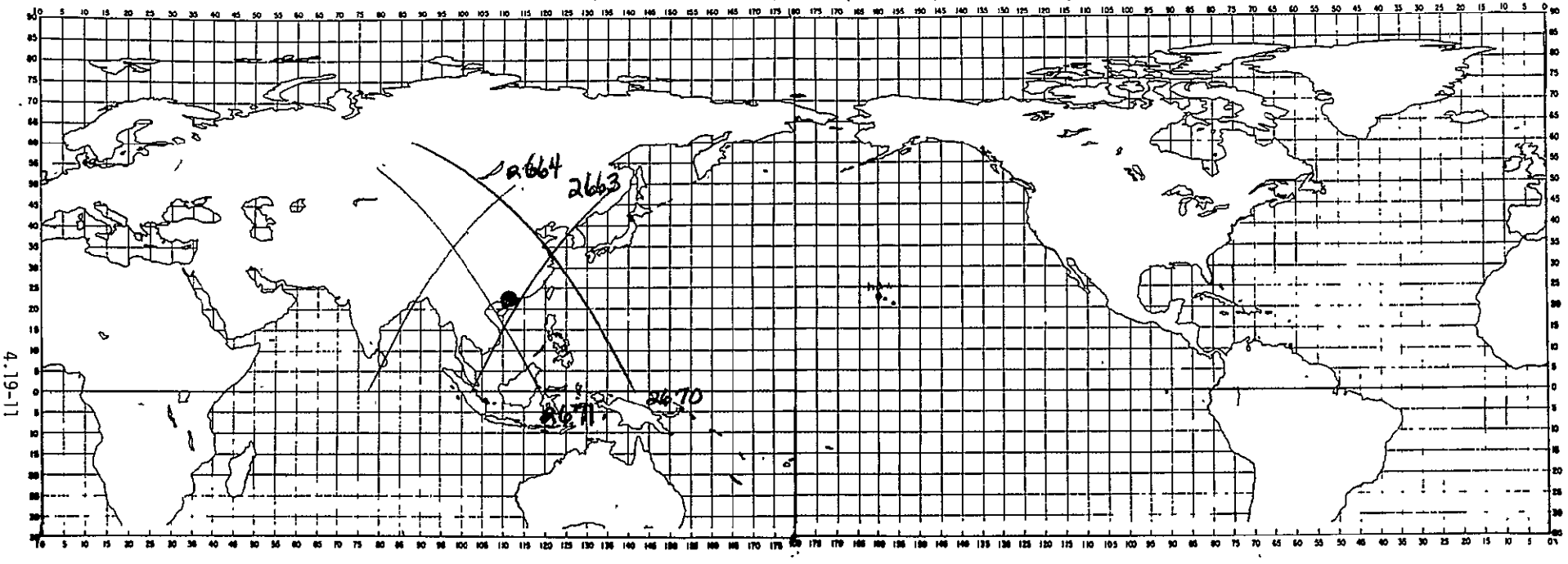


LOCATION

TIME	LATITUDE	LONGITUDE
CC357Z	21.8N	116.1E
1316Z	22.0N	113.7E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2648	-44.47	03 25 55 Z	0413Z	No			
2649	-69.80	05 07 42 Z	0552Z	No			
2655	+138.27	15 18 24 Z	1526Z	No			
2656	+112.94	17 00 11 Z	1705Z	No			

Disturbance: "Elsie" (TD-17) (West Pacific) – 10/15/75



4.19-11

LOCATION
OVER LAND

TIME	LATITUDE	LONGITUDE
?	23.0N	111.0W

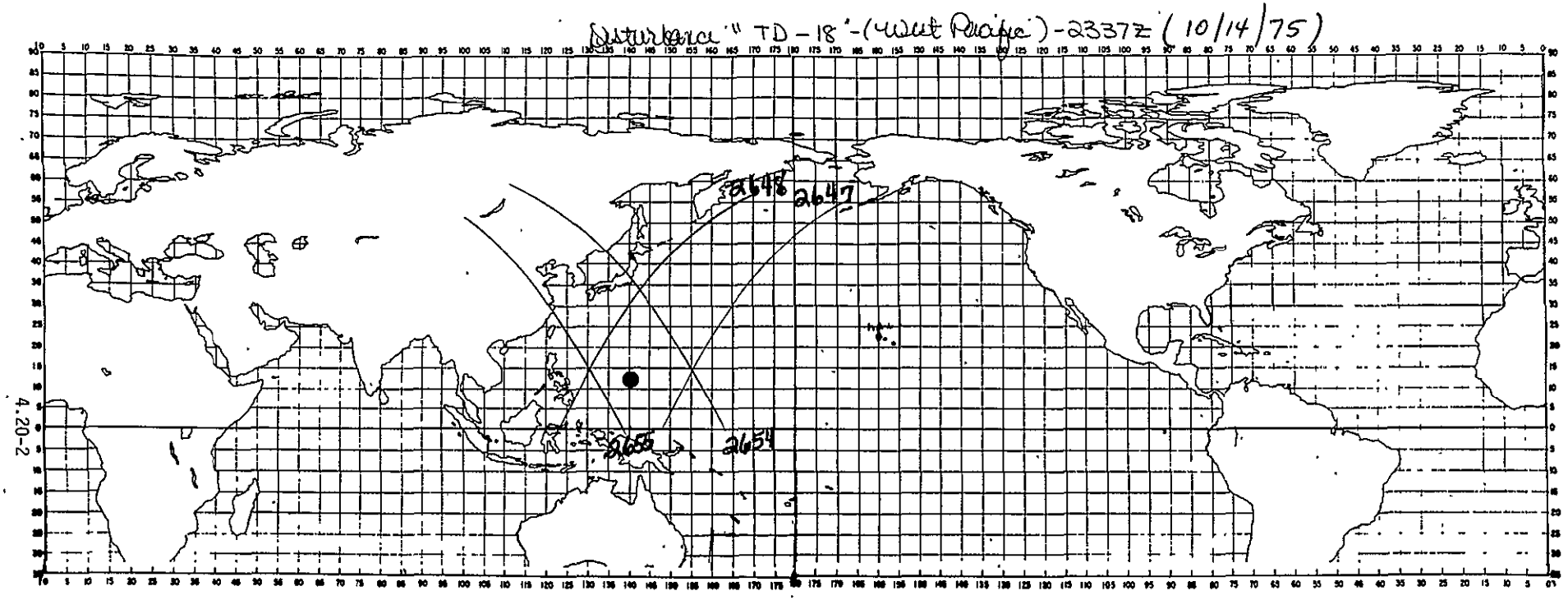
ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2663	-64.32	04 52 41 Z	05 38 Z	Do			
2664	-89.64	06 34 23 Z	07 16 Z	Do			
2670	+143.74	15 03 23 Z	15 12 Z	Do			
2671	+118.42	16 45 10 Z	16 51 Z	Do			

DISTURBANCE: TD-18 (WESTERN PACIFIC)

DATE: OCTOBER 14 - OCTOBER 19, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
10/14	2337Z	13.5N	140.0E			
10/15	1018Z	13.5N	136.0E			
10/16	0032Z 1113Z 2332Z	13.5N 13.5 13.9	133.0E 133.5 131.3			
10/17	1200Z	14.0N	126.0E			
10/18	0027Z 1304Z	14.0N 16.4	122.5E 120.8			
10/19	1200Z	18.0N	120.0E			

NOTE: See track map, page 4.1-5.

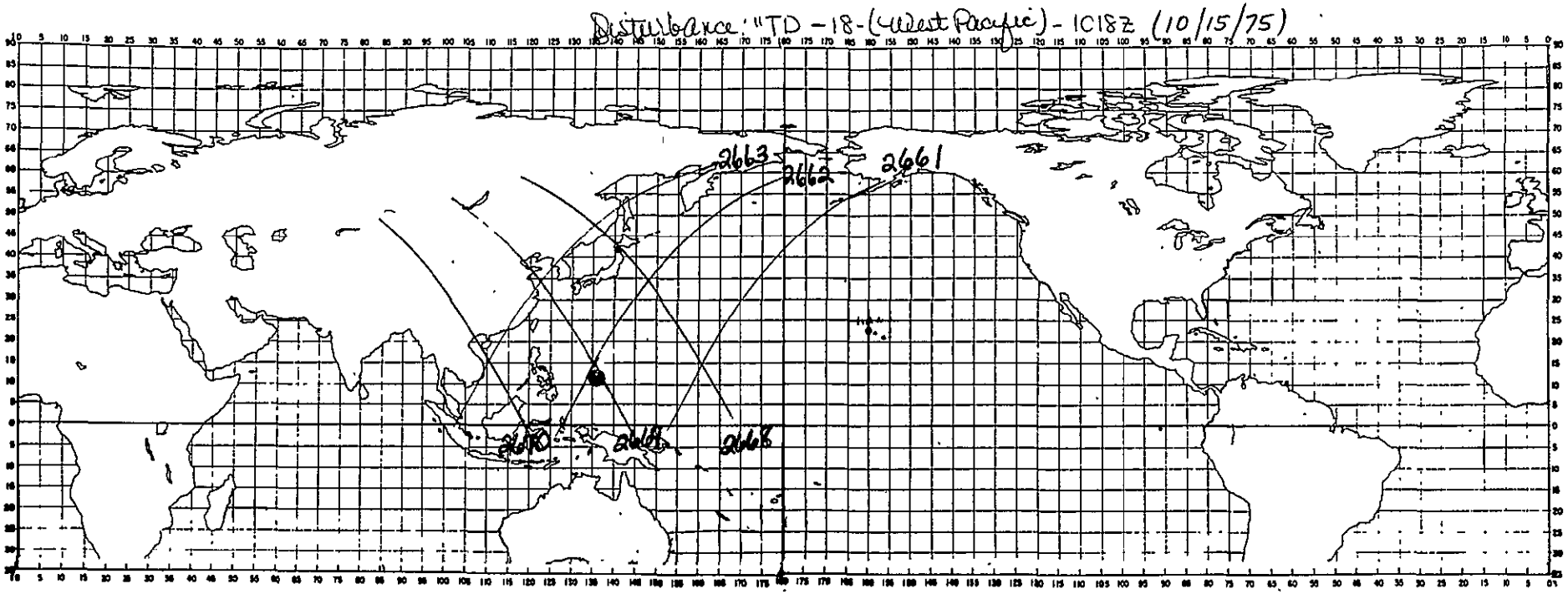


4.20-2

LOCATION

TIME	LATITUDE	LONGITUDE
2337Z	13 S N	140.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2647	01 44 08	-19.15 Z	02 32 Z	No			
2648	03 25 55	-44.47 Z	04 12 Z	No			
2654	13 36 37	+163.59 Z	13 43 Z	No			
2655	15 18 24	+138.27 Z	15 01 Z	No			

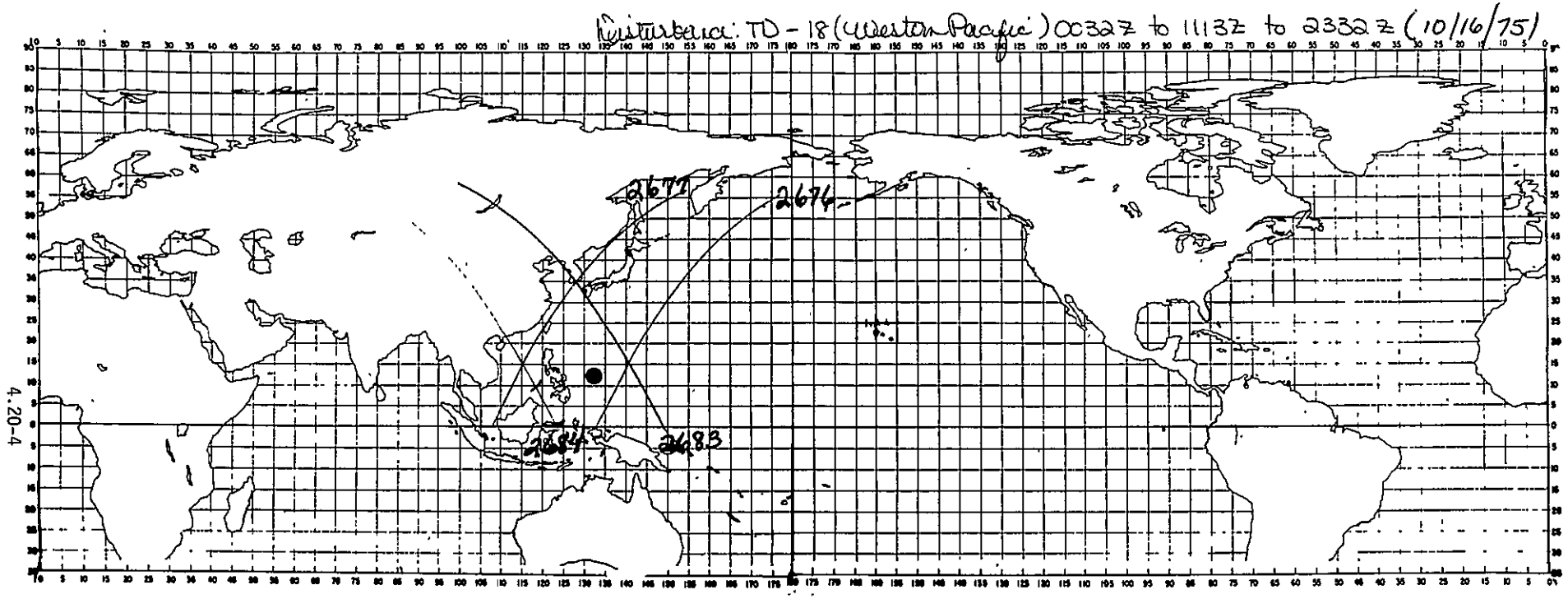


4.20-3

LOCATION

TIME	LATITUDE	LONGITUDE
1018Z	13.5N	136.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2661	-13.67	01 29 07 Z	02 19 Z	Do			
2662	-39.00	03 10 54 Z	03 58 Z	Do			
2663	-64.32	04 52 41 Z	05 38 Z	Do			
2668	+169.06	13 21 36 Z	13 29 Z	Do			
2669	+143.74	15 03 23 Z	15 06 Z	Do			
2670	+118.42	16 45 10 Z	16 47 Z	Do			



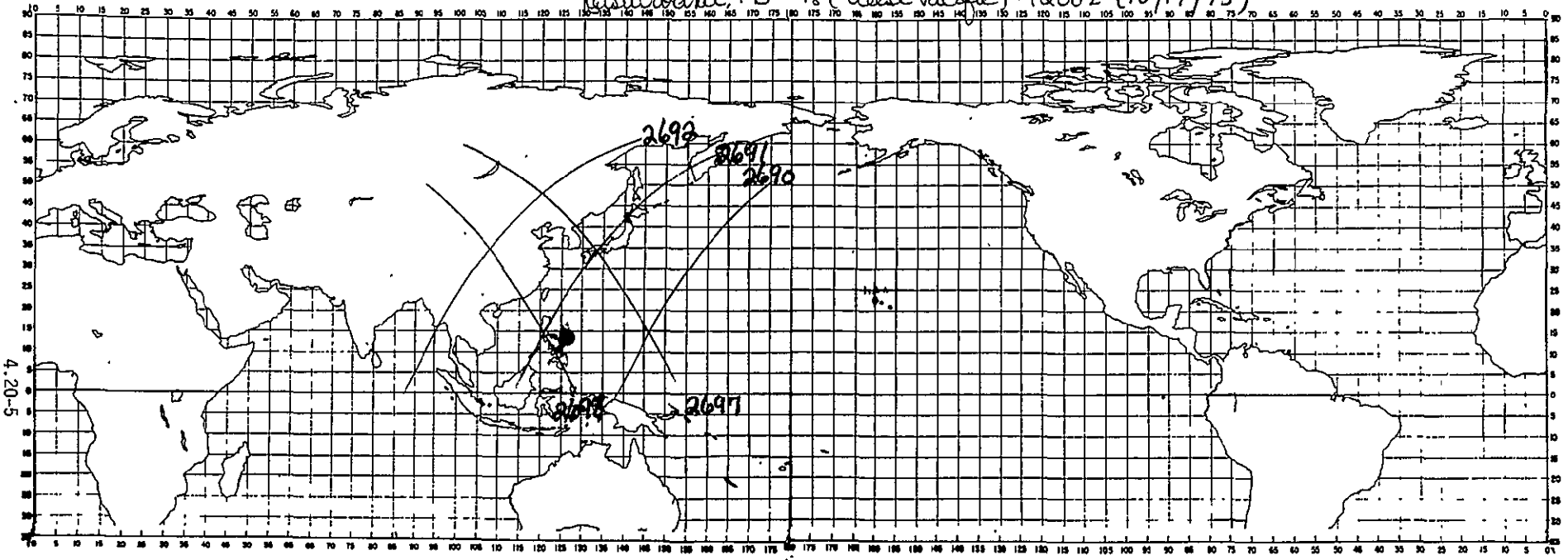
4.20-4

LOCATION

TIME	LATITUDE	LONGITUDE
00327	13.5N	133.0E
11137	13.5N	133.5E
23327	13.9N	131.3E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2676	−33.52	02 55 53 Z	03 44 Z	No			
2677	−58.85	04 37 40 Z	05 23 Z	No			
2683	+149.21	14 48 23 Z	14 53 Z	No			
2684	+123.89	16 30 10 Z	16 33 Z	No			

Disturbance, TD - 18 (West Pacific) - 1200Z (10/17/75)



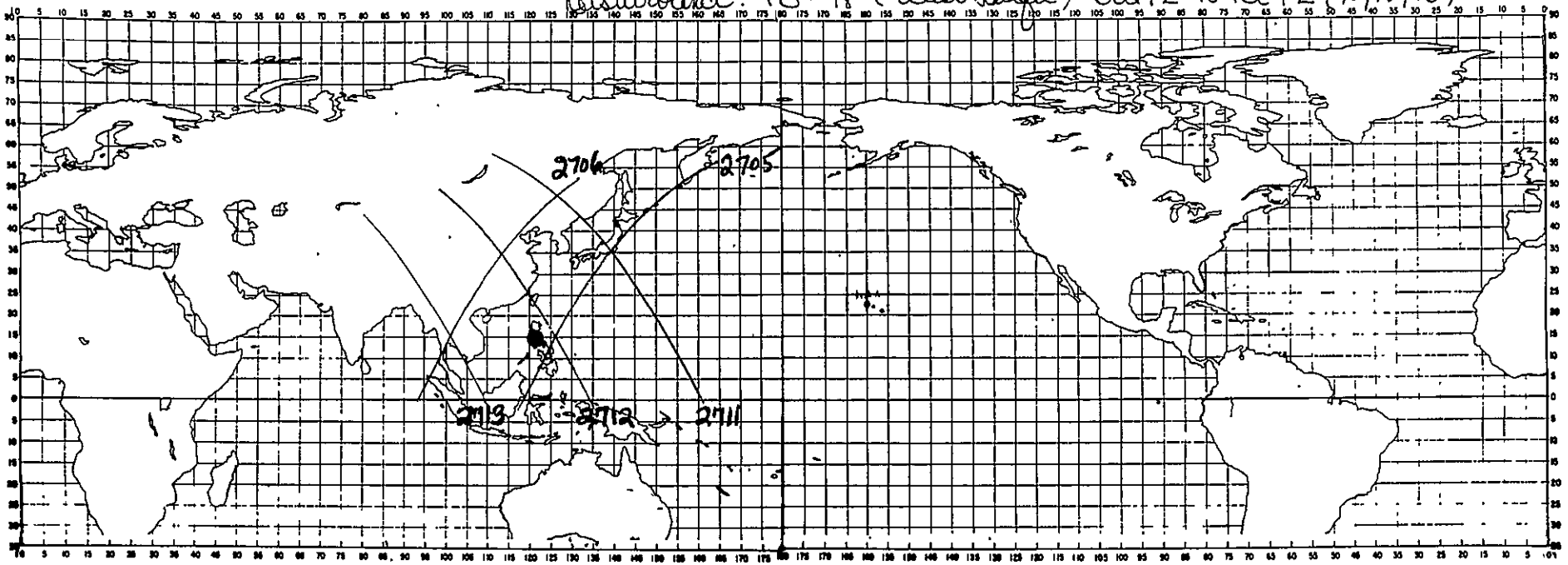
4.20-5

LOCATION

TIME	LATITUDE	LONGITUDE
1200Z	14.0N	126.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2690	-28.09	02 40 52 Z	03 29 Z	032523	033628	802	394
2691	-53.37	04 22 39 Z	05 09 Z	Do			
2692	-78.69	06 04 26 Z	06 48 Z	Do			
2697	+154.69	14 33 22 Z	14 39 Z	Do			
2698	+129.36	16 15 09 Z	16 18 Z	Do			

Disturbance. TD-18 (West Pacific) - 0027Z to 1304Z (10/18/75).

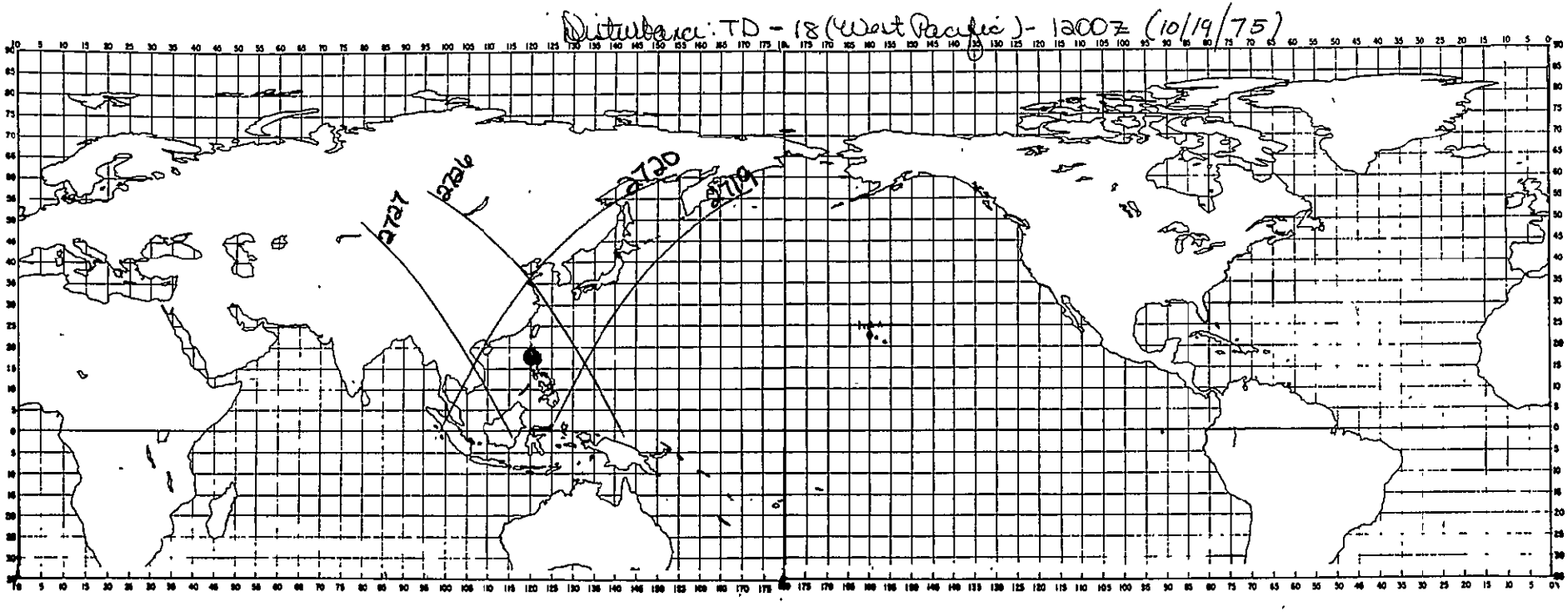


4.20-6

LOCATION

TIME	LATITUDE	LONGITUDE
0027Z	14.0N	122.5E
1304Z	16.4N	120.8E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2705	- 47.90	04 07 38 Z	04 55 Z	No			
2706	-73.22	05 49 26 Z	06 34 Z	No			
2711	+160.16	14 18 21 Z	14 26 Z	No			
2712	+134.84	16 00 08 Z	16 05 Z	No			
2713	+109.52	17 41 55 Z	17 45 Z	No			



4.20-7

LOCATION

TIME	LATITUDE	LONGITUDE
1200Z	18.0N	120.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2719	-42.42	03 52 38 Z	04 40 Z	No			
2720	- 67.75	05 34 25 Z	06 18 Z	No			
2726	+140.31	15 45 07 Z	15 52 Z	No			
2727	+114.99	17 26 54 Z	17 33 Z	No			

TYPHOON FLOSSIE

(October 20 - October 23, 1975)

Meteorological History/Data

The circulation which was to become typhoon Flossie was first analyzed 500 nm west-southwest of Guam on the 0000Z surface analysis of 14 October. This disturbance, apparently initiated by an upper tropospheric cyclone, then began drifting west. Its development was somewhat retarded on the 15th and 16th by the presence of TD-18, a disturbance 420 nm to the north-northeast. On the 19th, the disturbance (Flossie) moved into the South China Sea after crossing Luzon and began to intensify.

The first warning was issued on the morning of the 20th based on satellite and synoptic data. Early the next morning reconnaissance aircraft reported a central pressure of 989 mb and TD-19 was upgraded to Tropical Storm Flossie.

Midtropospheric ridging extending from the central North Pacific to the northern portion of the South China Sea was the controlling factor in steering Flossie. A weakness developed in this ridge during the next few days, producing extremely weak steering flow. This caused the storm to follow an erratic track during the period from 200000Z to 211200Z.

A container ship, the SS Mayaquez, reported a pressure of 980 mb and 60-knot winds on the afternoon of the 21st. At that time the Mayaquez was 40 nm south-southwest of the storm center. Flossie was upgraded to typhoon on the afternoon of the 22nd when located about 250 nm south of Hong Kong.

Flossie reached a maximum intensity of 70 knots on the evening of the 22nd. By the 23rd, the midtropospheric ridging was reestablished, and Flossie tracked northwest in the expected climatological direction for this area and time of year. As the typhoon approached landfall on the 23rd, its circulation was disrupted in the northeast quadrant by the terrain and its intensity began to diminish rapidly. Flossie made landfall on the afternoon of the 23rd on the northeast portion of the Luichow Peninsula. Winds at that time were down to 50 knots.

Although Typhoon Flossie's maximum winds were only 70 knots, the seas generated in the northern South China Sea remained a threat to shipping for several days.

Damage Estimates/Loss of Life

Two timber freighters, the Ming Sing and Kinabalu Satu, sunk between Flossie and the southern approaches to Hong Kong on the 21st and 22nd, respectively. Due to the high seas and typhoon force winds, all rescue efforts failed and a total of 44 men were lost. Three survivors were picked up in a lifeboat a week later.

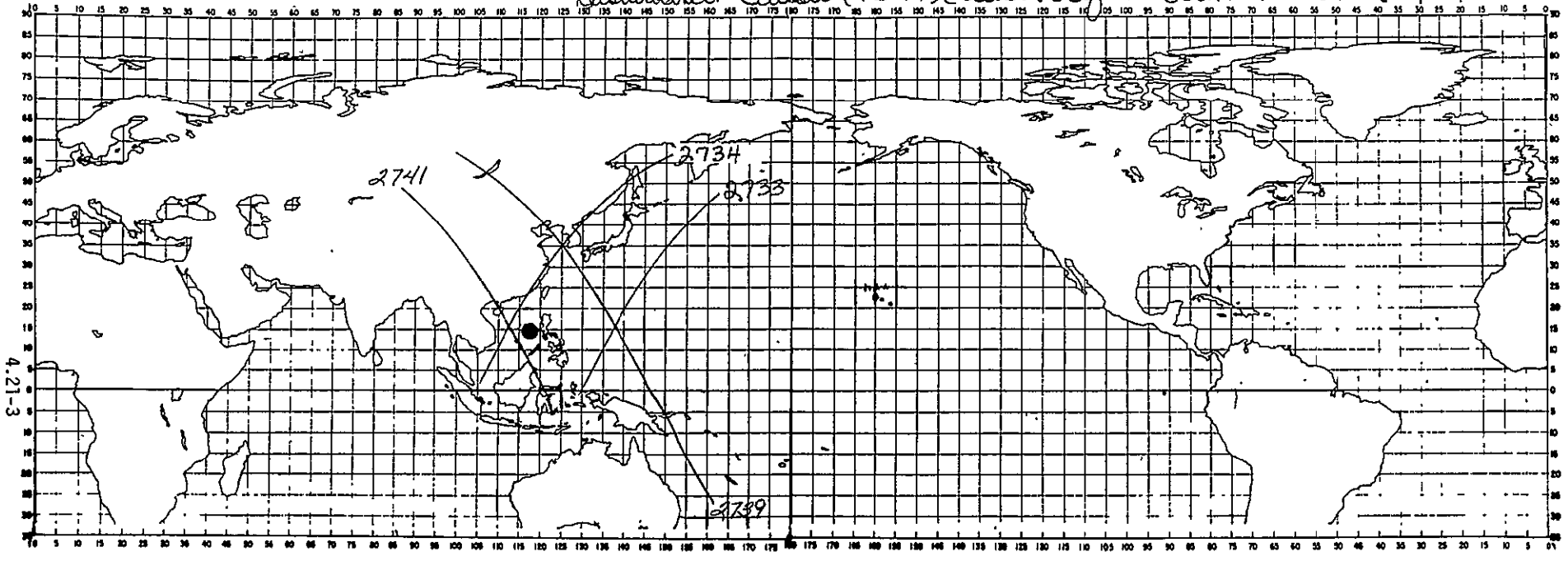
DISTURBANCE: TD-19, Flossie

DATE: October 20 - 23, 1975

Date	Time GMT	Position		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
10/20	0021Z 1259Z	14.5N 14.0N	117.5E 117.0E			
10/21	0116Z 1200Z	15.5N 16.8N	116.2E 115.3E	989 980	60	Tropical Storm
10/22	1210Z 1256Z	17.8N 19.1N	115.2E 113.2E			Typhoon
10/23	0110Z 1351Z	20.0N 23.0N	111.5E 108.0E		50	Tropical Storm

NOTE: See track map, page 4.1-8.

Disturbance: "Glosse" (TD-19) (Mideast Pacific) - 0021Z to 1259Z (10/20/75)



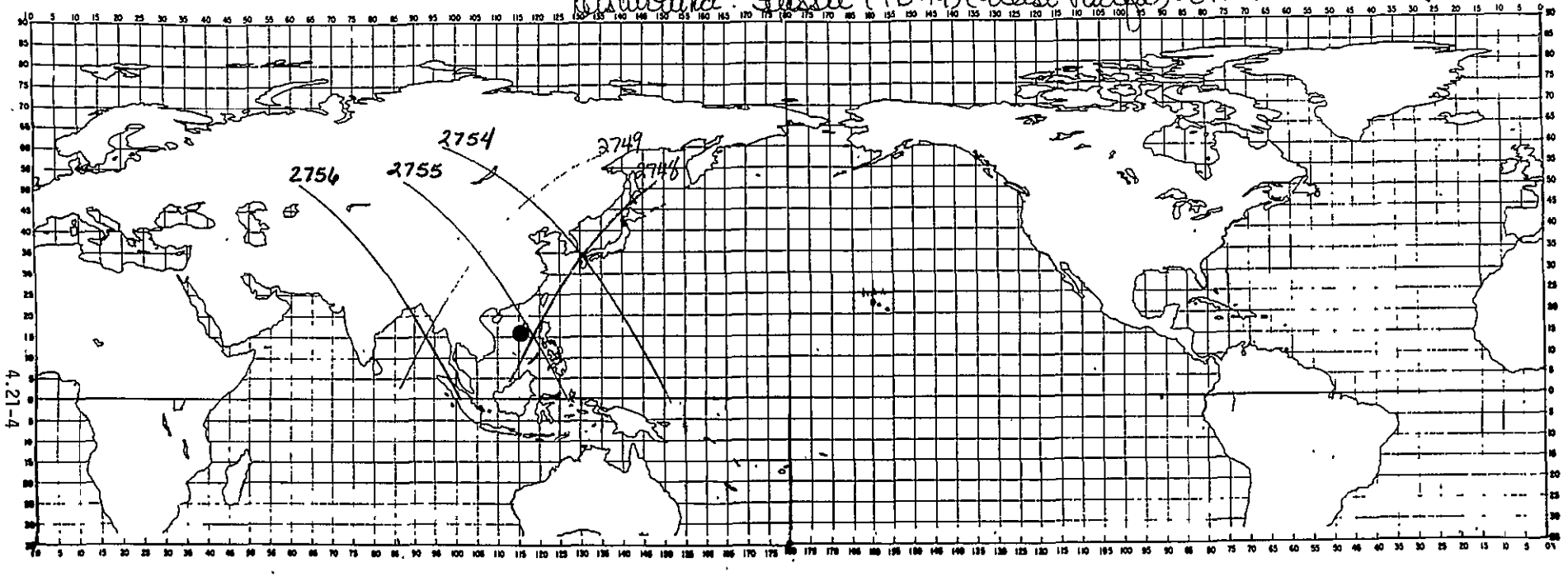
4.21-3

LOCATION

TIME	LATITUDE	LONGITUDE
0021Z	14.5N	117.5E
1259Z	15.0N	117.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2733	-36.95	03 37 37 Z	04 25 Z	Do			
2734	-62.27	05 19 24 Z	06 05 Z	Do			
2739	171.11	13 48 19 Z	15 37 Z	150816	154120	802	432
2741	+120.47	17 11 53 Z	17 16 Z	Do			

Disturbance: "Flossie" (TD-19) (West Pacific) - C116Z to 1200Z (10/21/75).



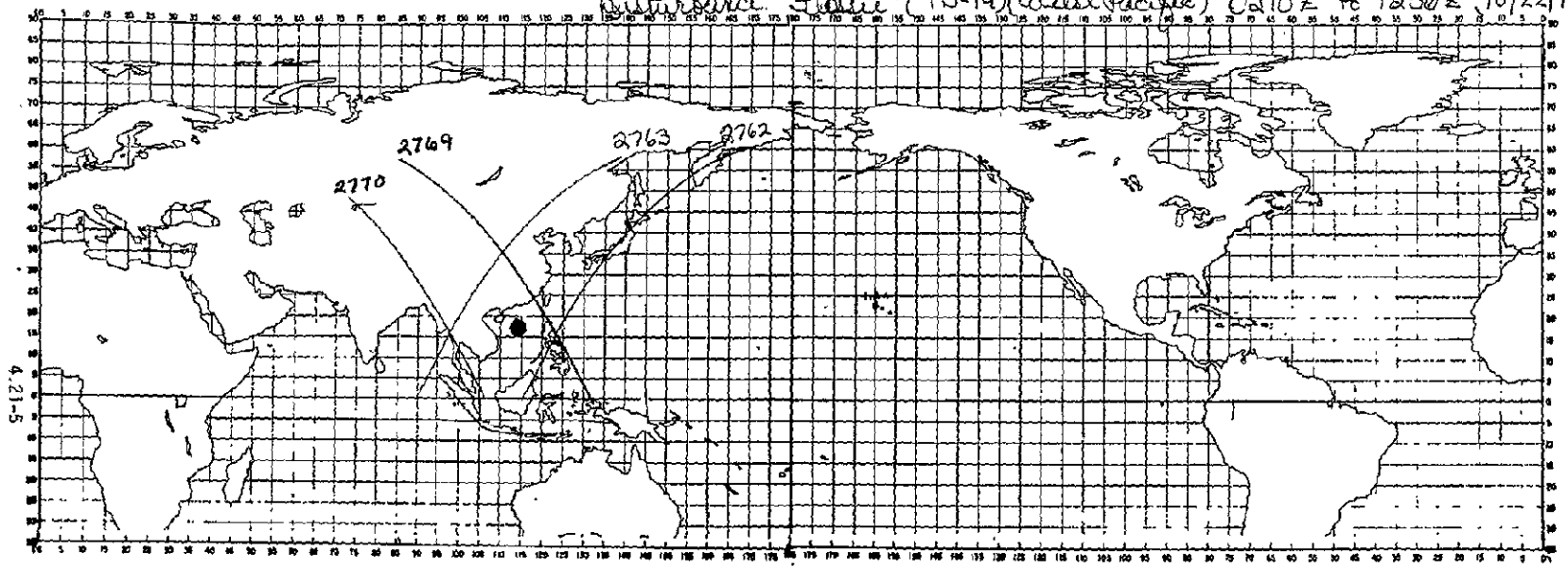
4.21-4

LOCATION

TIME	LATITUDE	LONGITUDE
0116Z	15.5N	116.2E
1200Z	16.8N	115.3E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2748	-56.80	05 04 23 Z	05 50 Z	Do			
2749	-82.12	06 46 10 Z	07 30 Z	Do			
2754	+151.27	15 15 05 Z	15 23 Z	Do			
2755	+125.94	16 56 53 Z	17 02 Z	Do			
2756	+100.61	18 38 40 Z	18 40 Z	Do			

Disturbance "Hope" (TD-19) (West Pacific) 0210Z to 1256Z (10/22/75)



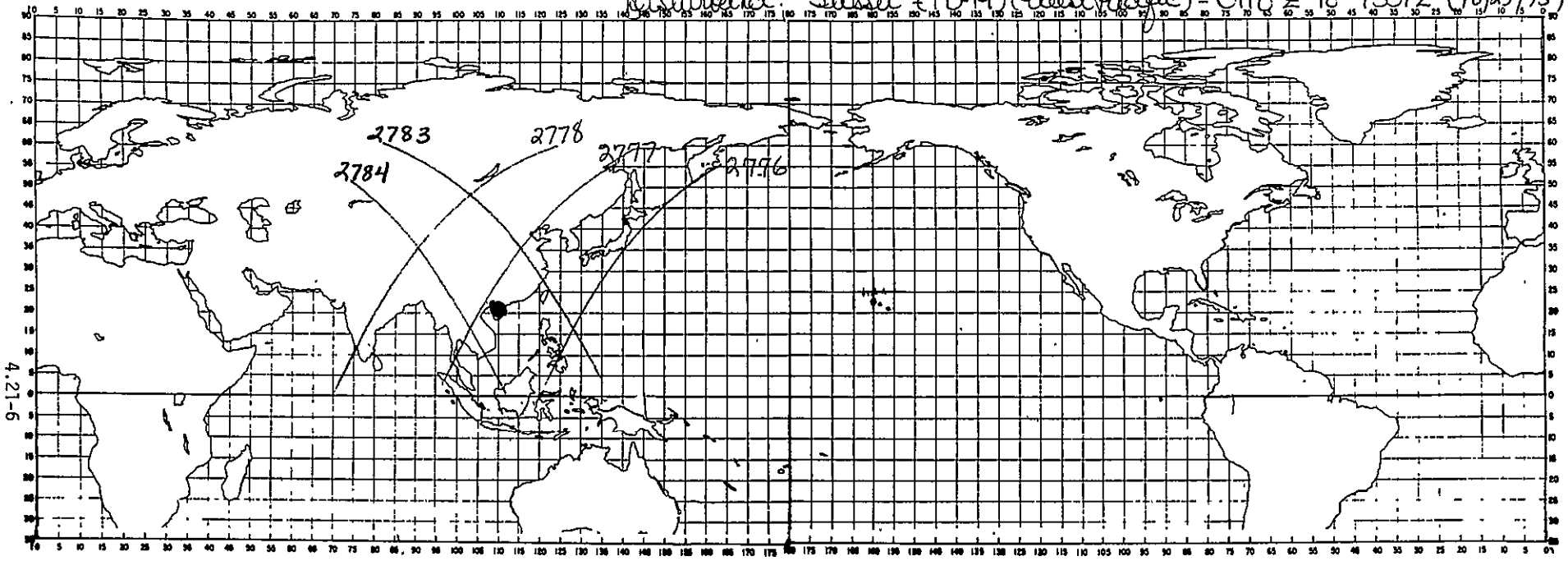
4.21-5

LOCATION

TIME	LATITUDE	LONGITUDE
0210Z	17.8N	115.2E
1256Z	19.1N	113.2E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2762	-51.32	04 49 22 Z	05 36 Z	Do			
2763	-76.65	06 31 09 Z	07 15 Z	Do			
2769	+131.41	16 41 52 Z	16 48 Z	Do			
2770	+106.09	18 23 39 Z	18 38 Z	Do			

Disturbance: "Ilsei" (TD-19) (West Pacific) - 0110Z to 1351Z (10/23/75)



4.21-6

LOCATION

TIME	LATITUDE	LONGITUDE
0110Z	20.0N	111.5E
1351Z	23.0N	108.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2776	-45.85	04 34 21 Z	05 20 Z	Do			
2777	-71.17	06 16 08 Z	07 00 Z	Do			
2778	-96.49	07 57 55 Z	08 40 Z	Do			
2783	+136.89	16 26 51 Z	16 35 Z	Do			
2784	+111.57	18 08 38 Z	18 15 Z	Do			

DISTURBANCE: Tropical Storm Grace

DATE: October 25 - November 2, 1975

Date	Time GMT	Position *		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
10/25	0000Z	18.0N	128.0E			Tropical Disturbance
10/26	0000Z	19.0N	128.5E			Tropical Storm
10/27	0000Z	18.5N	130.0E			Tropical Disturbance
10/28	0000Z	18.0N	132.0E			Tropical Depression
10/29	0000Z	17.0N	128.5E			Tropical Depression
10/30	0000Z	18.5N	129.0E			Tropical Storm
10/31	0000Z	22.0N	133.5E			Tropical Storm
11/01	0000Z	24.5N	133.5E			Tropical Storm

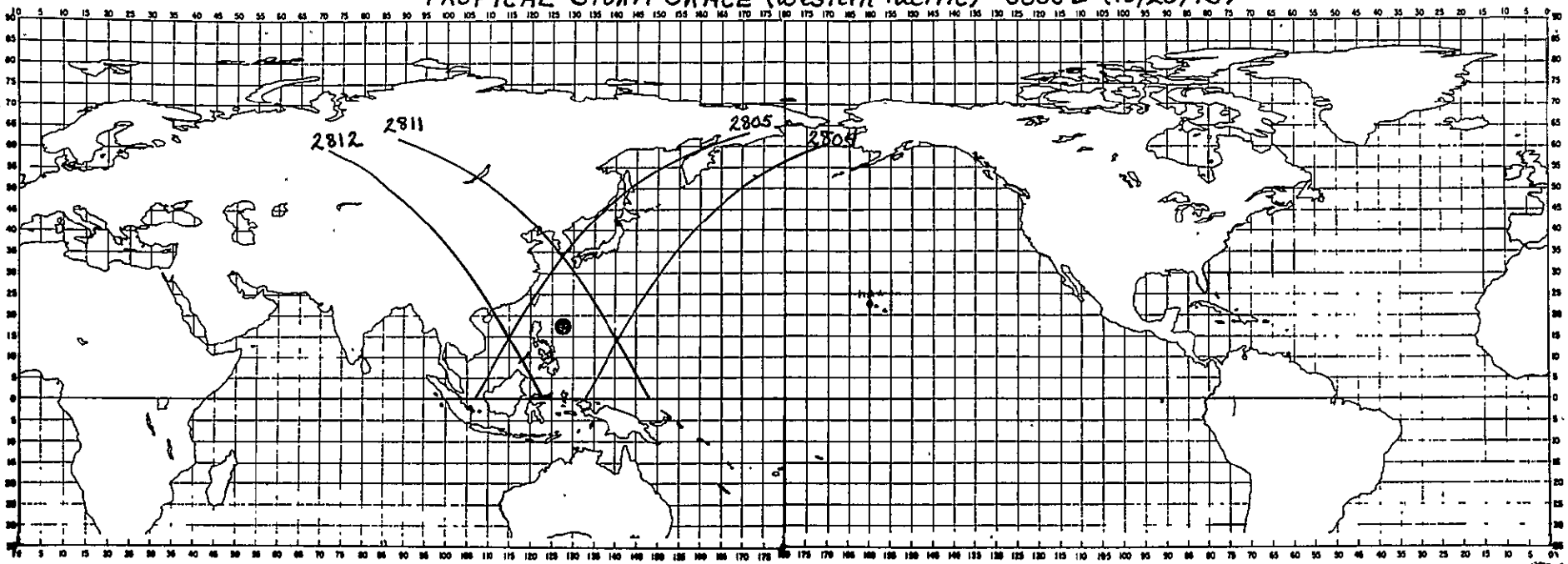
DISTURBANCE: Tropical Storm Grace

DATE: October 25 - November 2, 1975

Date	Time GMT	Position*		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
11/02	0000Z	27.0N	140.5E			Tropical Storm
	0600Z	26.0N	142.5E			Tropical Storm

* Positions estimated from track map - see page 4.1-5.

TROPICAL STORM GRACE (Western Pacific) - 0000Z (10/25/75)



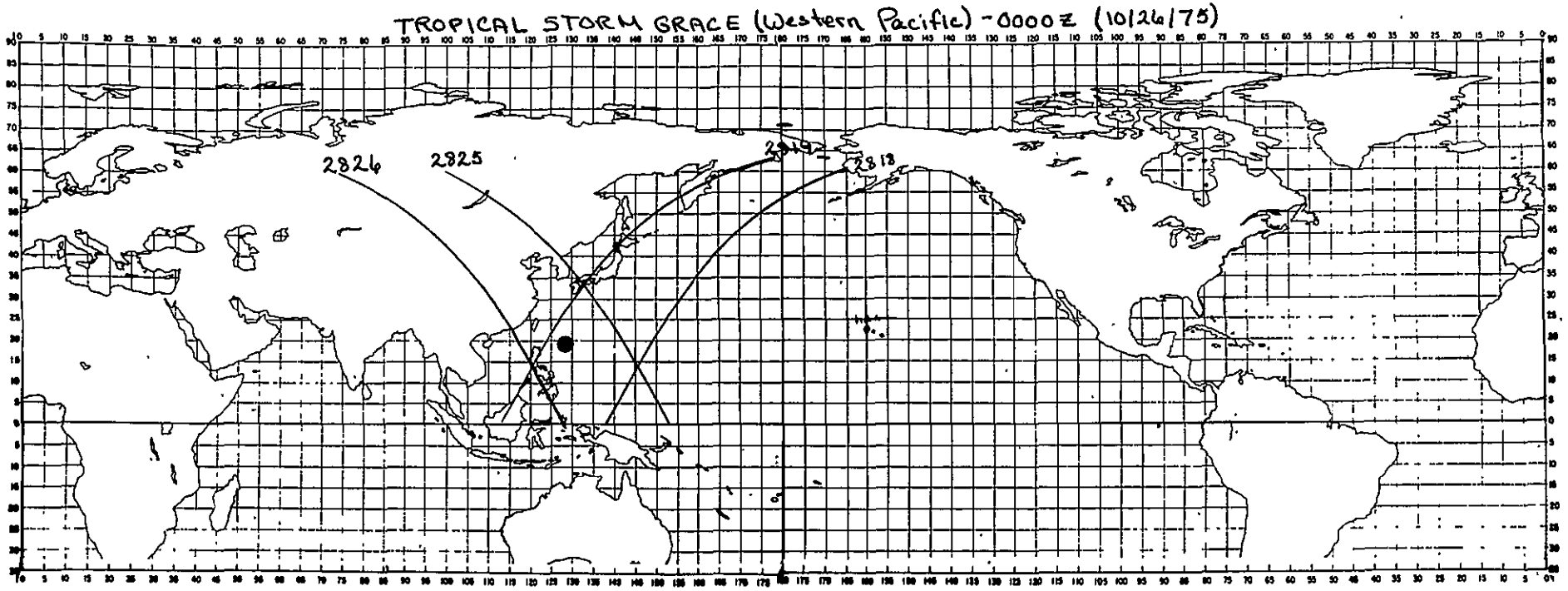
LOCATION *

Tropical Disturbance

TIME	LATITUDE	LONGITUDE
0000Z	18.0N	128.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ
2804	-34.90	04 04 20 Z	0450Z	Do			
2805	-60.22	05 46 07 Z	0630Z	Do			
2811	147.83	15 56 49 Z	1604Z	Do			
2812	122.51	17 38 36 Z	1741Z	Do			

* Position estimated from track map - page 4.1-5.



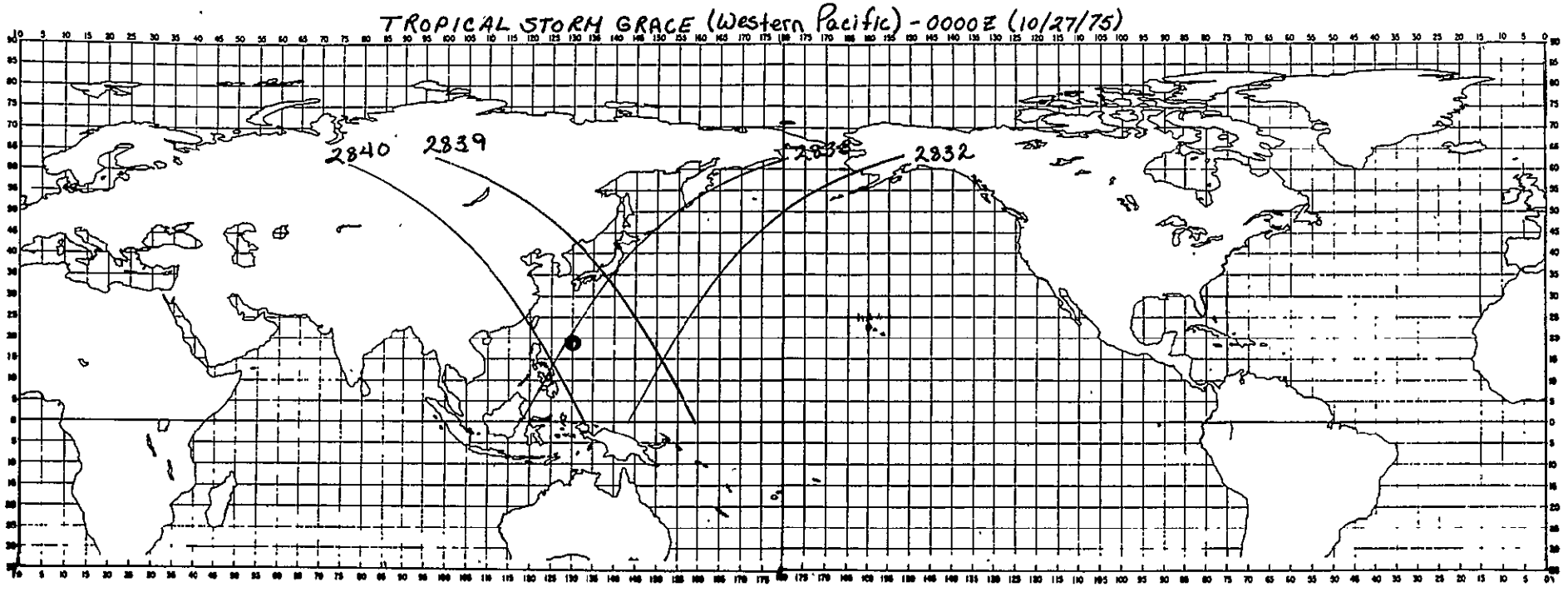
LOCATION*

Tropical Storm

TIME	LATITUDE	LONGITUDE
0000Z	19.0N	128.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2818	-29.42	03 49 19 Z	0436Z	No			
2819	-54.74	05 31 06 Z	0615Z	No			
2825	153.31	15 41 48 Z	1550Z	No			
2826	127.99	17 23 35 Z	1728Z	No			

*Position estimated from track map - see page 4.1-5.



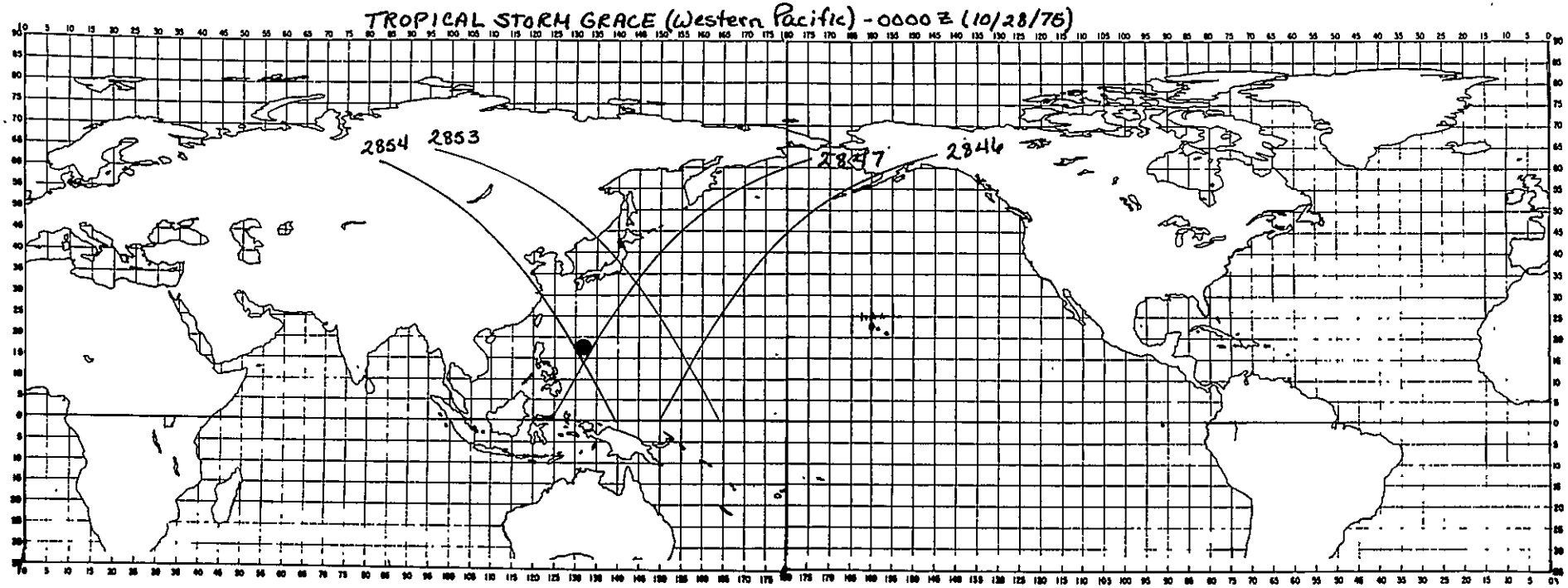
LOCATION*

Tropical Disturbance

TIME	LATITUDE	LONGITUDE
0000Z	18.5N	130.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2832	-23.95	03 34 18Z	0422Z	041956	043005	802	482
2833	-49.27	05 16 05Z	0601Z	Do			
2839	158.78	15 26 47Z	1536Z	Do			
2840	133.46	17 08 34Z	1712Z	Do			

*Position estimated from track map - see page 4.1-5.



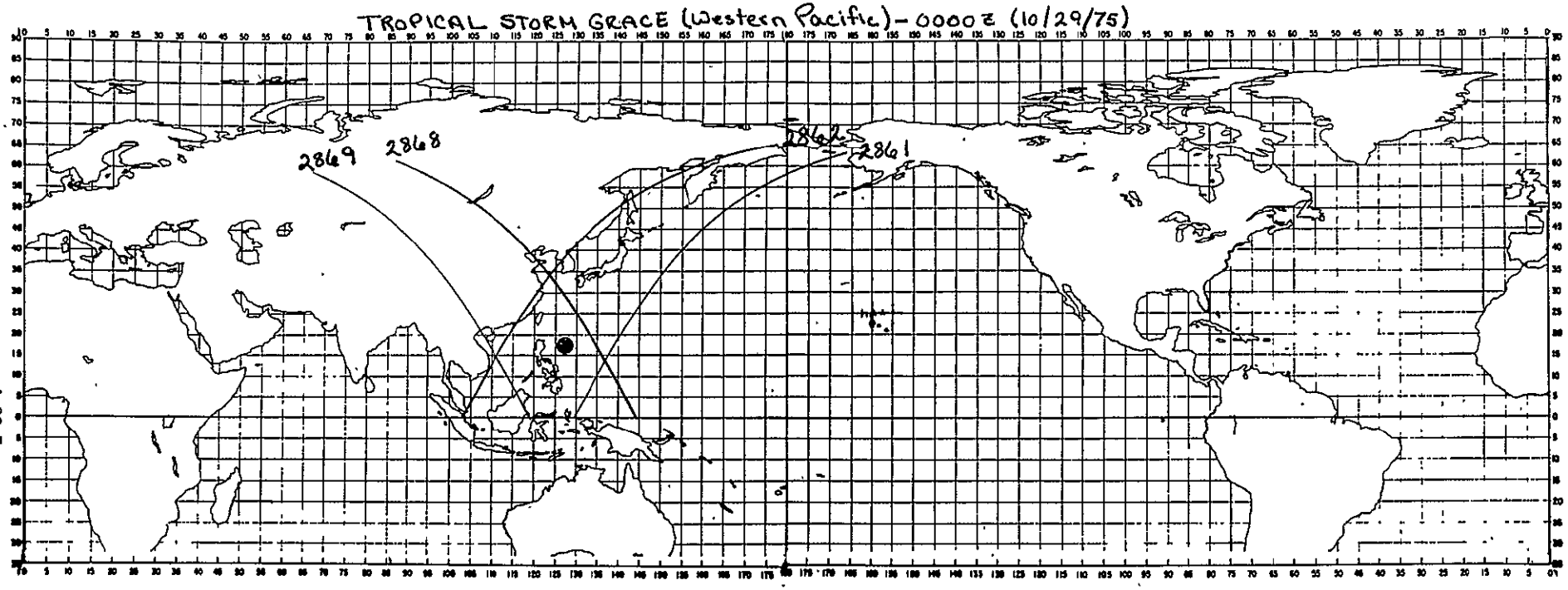
LOCATION*

Tropical Depression

TIME	LATITUDE	LONGITUDE
0000Z	18.0N	132.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2846	-18.47	03 19 17 Z	0407Z	Do			
2847	-43.79	05 01 04 Z	0547Z	Do			
2853	164.25	15 11 47 Z	1521Z	Do			
2854	138.93	16 53 34 Z	1659Z	Do			

*Position estimated from track map - see page 4.1-5.



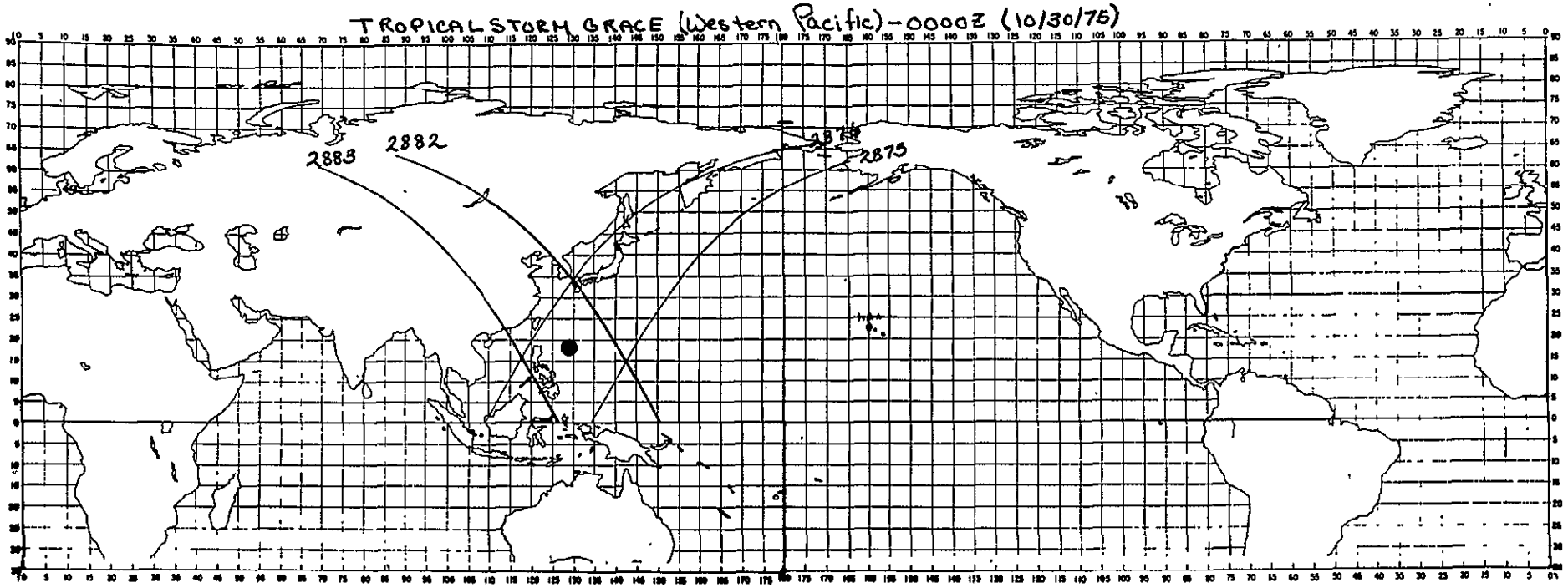
LOCATION*

Tropical Depression

TIME	LATITUDE	LONGITUDE
0000Z	17.0 N	128.5 E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2861	-38.32	04 46 03 Z	0533Z	Do			
2862	-63.64	06 27 50 Z	0711Z	Do			
2868	144.41	16 38 33 Z	1645Z	Do			
2869	119.08	18 20 20 Z	1822Z	Do			

*Position estimated from track map - see page 4.1-5.



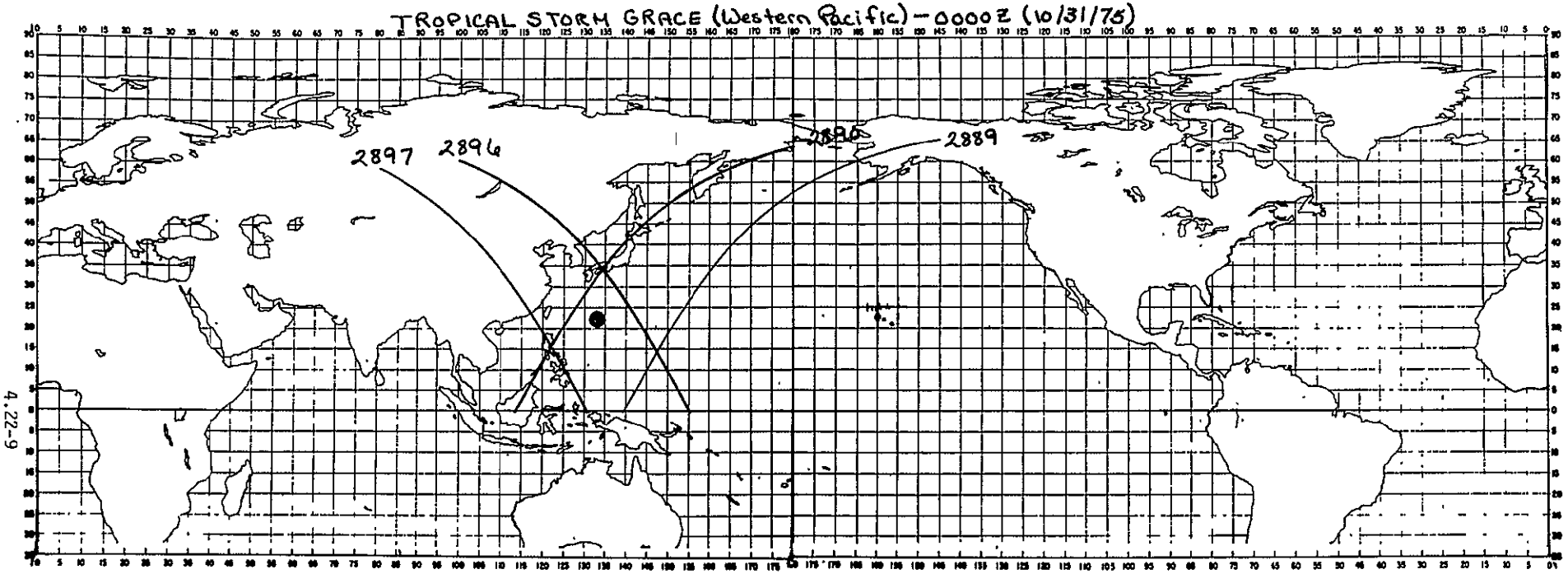
LOCATION *

Tropical Storm

TIME	LATITUDE	LONGITUDE
0000Z	18.5N	129.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2875	-32.84	04 31 02 Z	0517 Z	No			
2876	-58.17	06 12 49 Z	0657 Z	Do			
2882	149.88	16 23 32 Z	1631 Z	Do			
2883	124.56	18 05 19 Z	1809 Z	Do			

*Position estimated from track map - see page 4.1-5.



4.22-9

LOCATION*

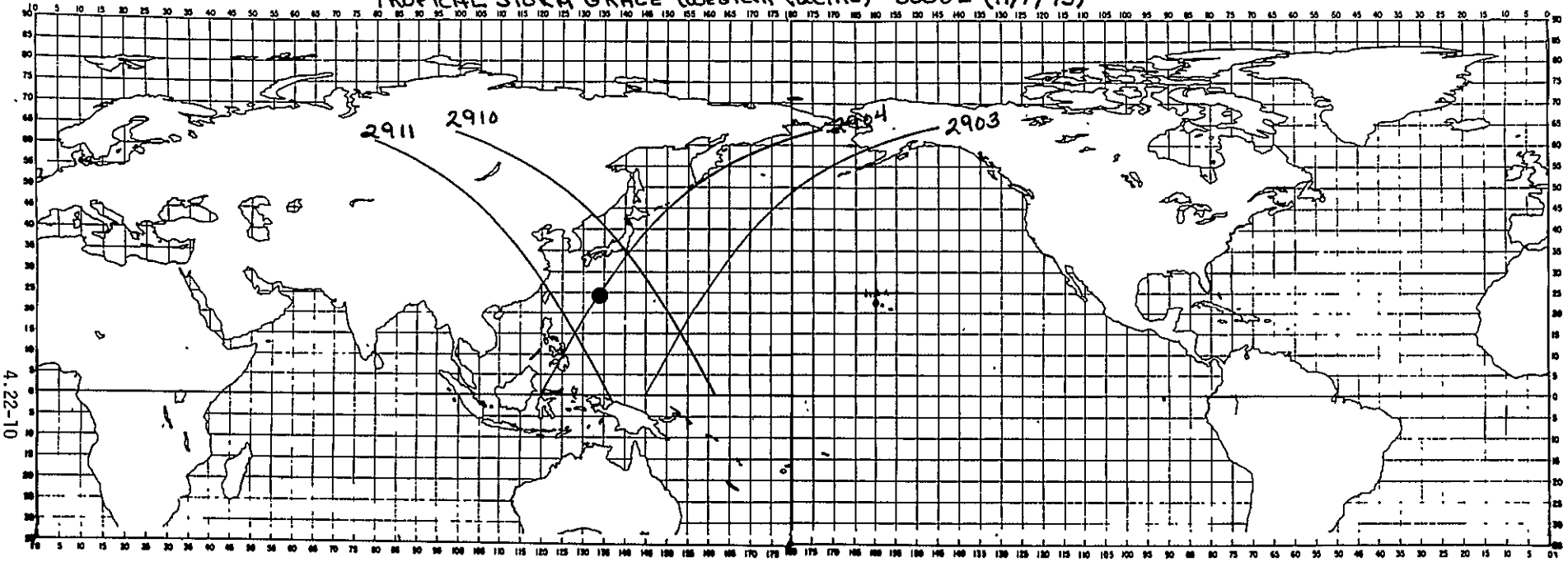
Tropical Storm

TIME	LATITUDE	LONGITUDE
0000Z	22.0N	133.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2889	-27.37	04 16 01 Z	0502Z	No			
2890	-52.69	05 57 48 Z	0641Z	No			
2896	155.36	16 08 31 Z	1617Z	No			
2897	130.04	17 50 18 Z	1754Z	No			

*Position estimated from track map - see page 4.1-6.

TROPICAL STORM GRACE (Western Pacific) - 0000Z (11/1/75)



4.22-10

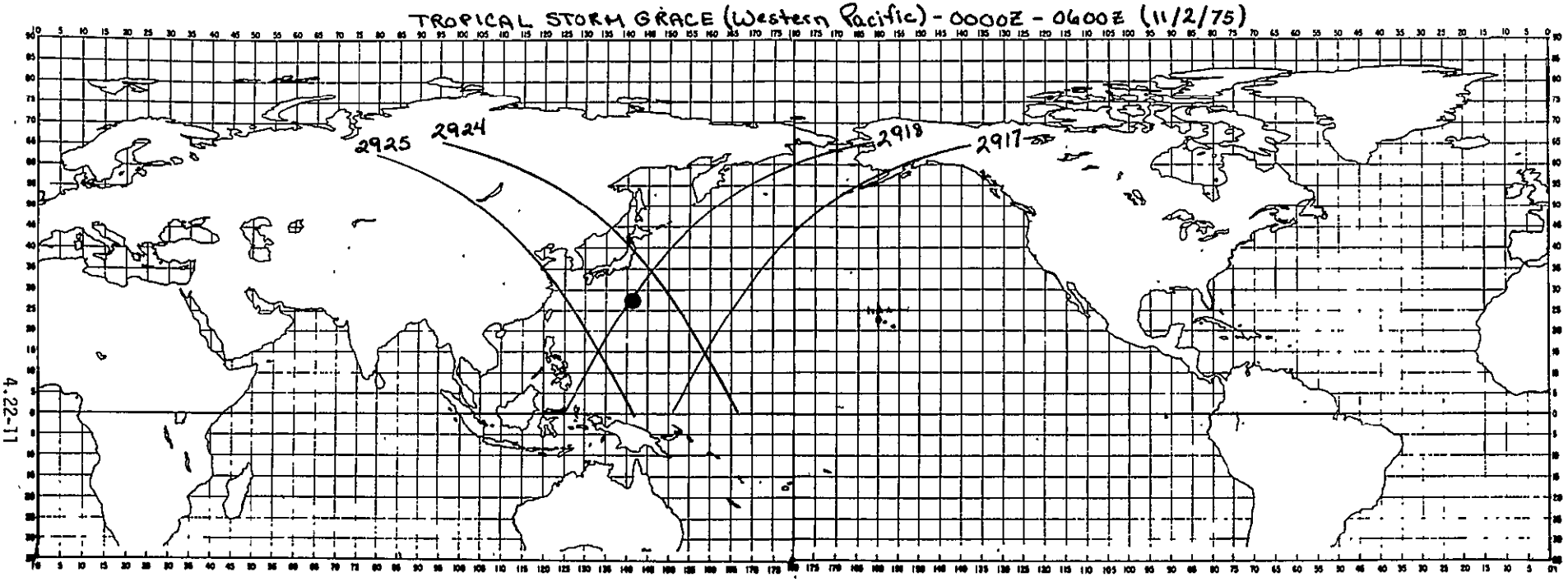
LOCATION *

Tropical Storm

TIME	LATITUDE	LONGITUDE
0000Z	24.5N	133.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2903	-21.90	04 01 01 Z	0448Z	No			
2904	-47.22	05 42 48 Z	0626Z	060918	063405	802	520
2910	160.83	15 53 30 Z	1603Z	No			
2911	135.51	17 35 17Z	1741Z	No			

* Position estimated from track map - see page 4.1-5.



4.22-11

LOCATION*

Tropical Storm

TIME	LATITUDE	LONGITUDE
0000Z	27.0 N	140.5E
0600Z	26.0 N	142.5 E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2917	-16.42	03 46 00 Z	0432Z	No			
2918	-41.74	05 27 47Z	0612Z	No			
2924	166.31	15 38 39Z	1548Z	No			
2925	140.99	17 20 16Z	1726Z	No			

*Position estimated from track map - see page 4.1-5.

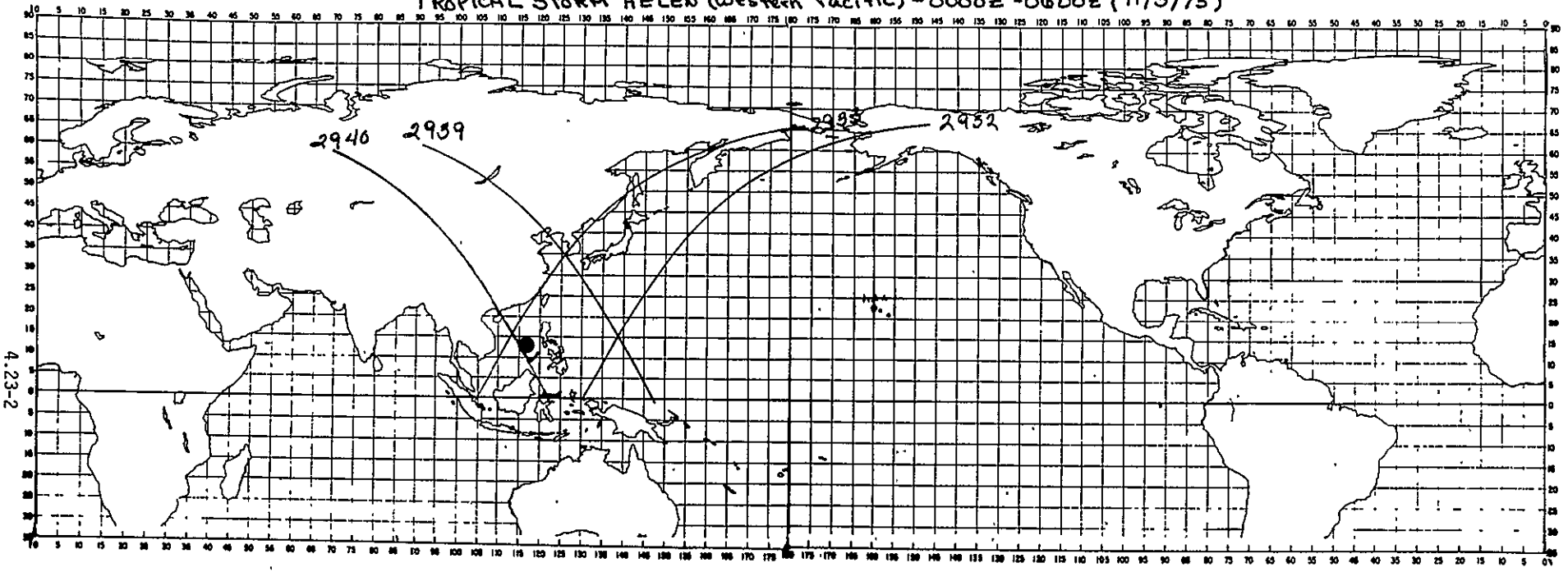
DISTURBANCE: Tropical Storm Helen

DATE: November 3 - November 4, 1975

Date	Time GMT	Position *		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
11/03	0000Z	13.5N	116.0E			Tropical Depression
	0600Z	13.9N	114.5E			Tropical Storm
11/04	0000Z	13.0N	111.0E			Tropical Storm
	1200Z	13.0N	108.0E			Tropical Depression

* Positions estimated from track map - see page 4.1-5.

TROPICAL STORM HELEN (Western Pacific) - 0000Z - 0600Z (11/3/75)



4.23-2

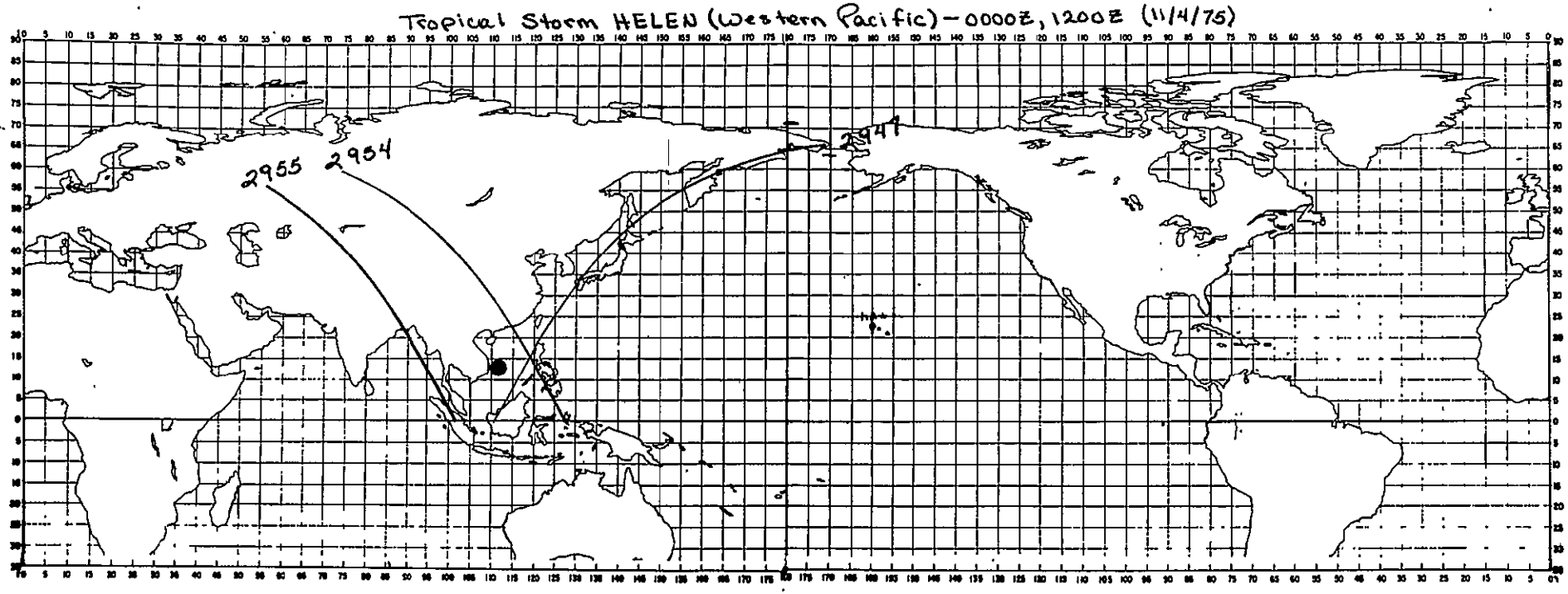
LOCATION*

Tropical Storm

TIME	LATITUDE	LONGITUDE
0000Z	13.5N	116.0E
0600Z	13.9N	114.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2932	-36.27	05 12 46 Z	0602Z	No			
2933	-61.59	06 54 33 Z	0741Z	No			
2939	146.46	17 05 15 Z	1713Z	No			
2940	121.14	18 47 02 Z	1851Z	No			

*Position estimated from track map - see page 4.1-5.



4.23-3

LOCATION*

Tropical Storm

TIME	LATITUDE	LONGITUDE
0000Z	13.0N	111.0E
1200Z	13.0N	108.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2947	-56.12	06 39 32 Z	0727Z	No			
2954	126.61	18 32 01 Z	1837Z	No			
2955	101.29	20 13 49 Z	2016Z	No			

*Position estimated from track map – see page 4.1-5.

TYPHOON IDA

(6 November - 11 November, 1975)

Meteorological History/Data

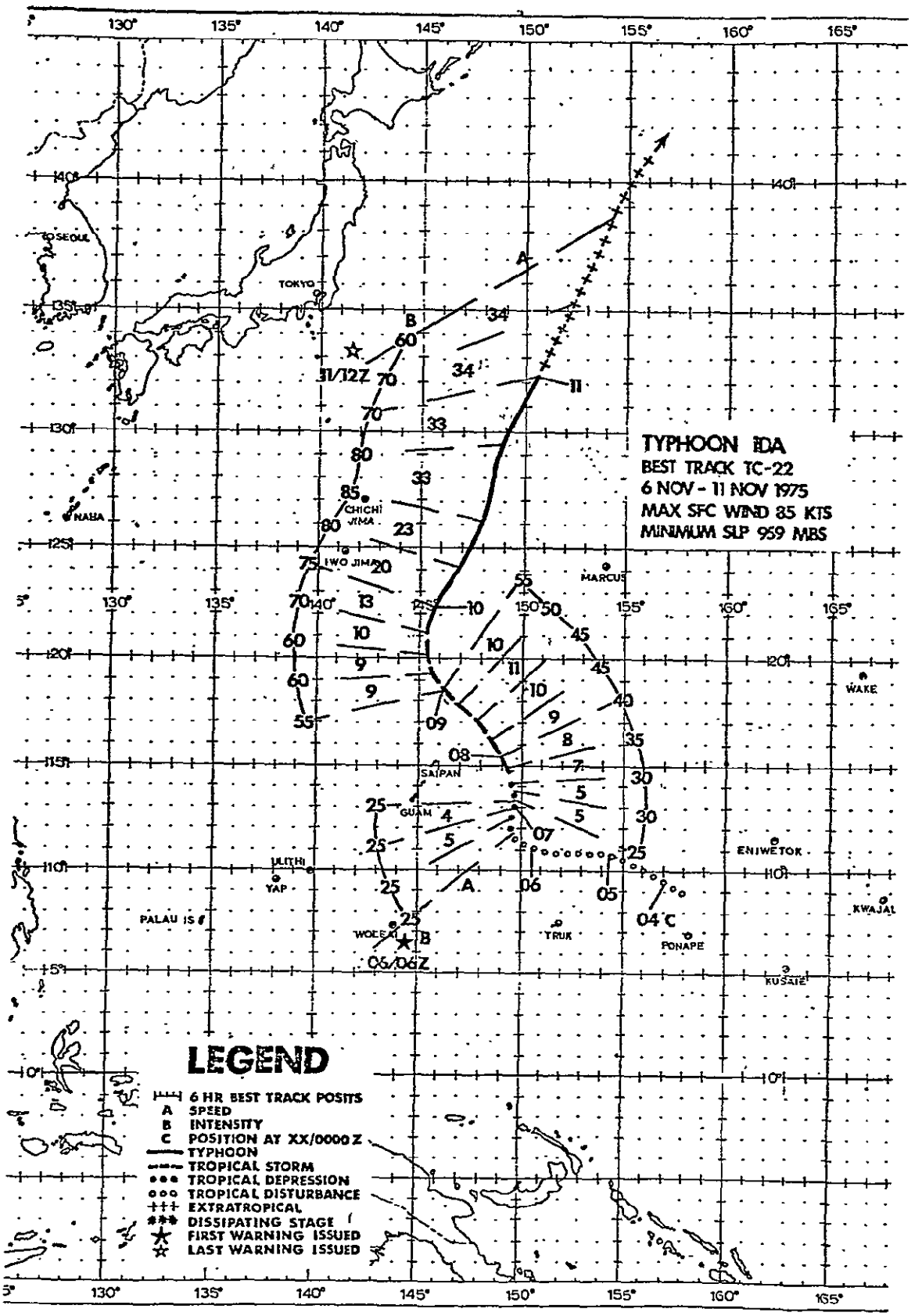
Destined to spend its entire life cycle at sea, Typhoon Ida was first observed as a tropical disturbance on the 4th of November, 150 nm northwest of Ponape. The disturbance initially moved westward at 8 knots with dual circulation centers oriented along a northeast to southwest axis. The disturbance became a tropical depression at 0600Z on the 6th and then began moving toward the north through a weakness in the midtropospheric subtropical ridge. The depression continued to move north at 4-5 knots for the next 24 hours while the two circulation centers consolidated into one.

Early on the morning of the 8th, the depression was upgraded to Tropical Storm Ida and it accelerated toward the northwest at 10 knots. Ida continued to intensify as the center passed near the Southern Mariana Islands, with wind gusts of 32 knots reported on Guam on the 7th. On the 9th Pagan Island in the Northern Marianas reported 40-knot winds.

By the 9th, Ida had come under the influence of a deep mid-latitude trough centered 600 nm to the west and began to re-curve. The storm attained typhoon intensity by 1800Z on the 9th and began tracking toward the north-northeast at an accelerated rate. A minimum central pressure of 959 mb was observed by aircraft reconnaissance at 1437Z on the 10th. By 0000Z on the 11th, Ida was moving toward the north-northeast at 33 knots and had lost much of her tropical cyclone characteristics as evidenced by satellite data. Twelve hours later, Ida had combined with a frontal system and continued to move rapidly northeastward as an extratropical system.

Damage Estimates

Unknown.


TYPHOON IDA
BEST TRACK TC-22
6 NOV - 11 NOV 1975
MAX SFC WIND 85 KTS
MINIMUM SLP 959 MBS
LEGEND
6 HR BEST TRACK POSITS
A SPEED
B INTENSITY
C POSITION AT XX/0000 Z
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
SEOUL
TOKYO
NAHA
CHICHI JIMA
IWO JIMA
MARCUS
WAKE
SAIPAN
GUAM
ULITHI
YAP
PALAU IS
WOLEAI
TRUK
PONAPE
ENIWETOK
KWAJAL
KUSAIE
31/12Z
06/06Z
04 C

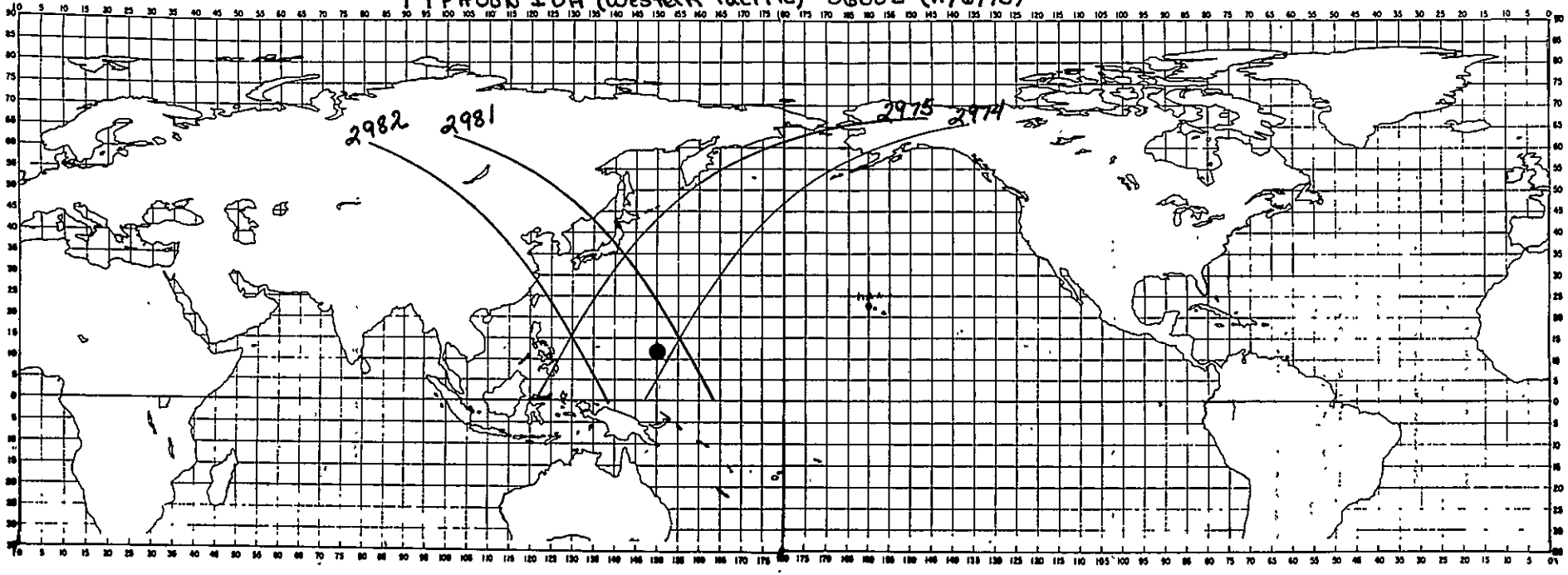
DISTURBANCE: Typhoon Ida

DATE: November 6 - 11, 1975

Date	Time GMT	Position*		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
11/6	0600Z	11.0N	150.0E			Tropical Depression
11/7	0600Z	13.5N	149.5E			
11/8	0600Z	15.0N	149.0E			Tropical Storm
11/9	1800Z	21.0N	146.0E			Typhoon
11/10	1437Z	27.0N	148.0N	959		
11/11	1200Z	37.0N	153.0E			Extratropical

* Position estimated from track map, page 4.24-2.

TYPHOON IDA (Western Pacific) - 0600Z (11/6/75)



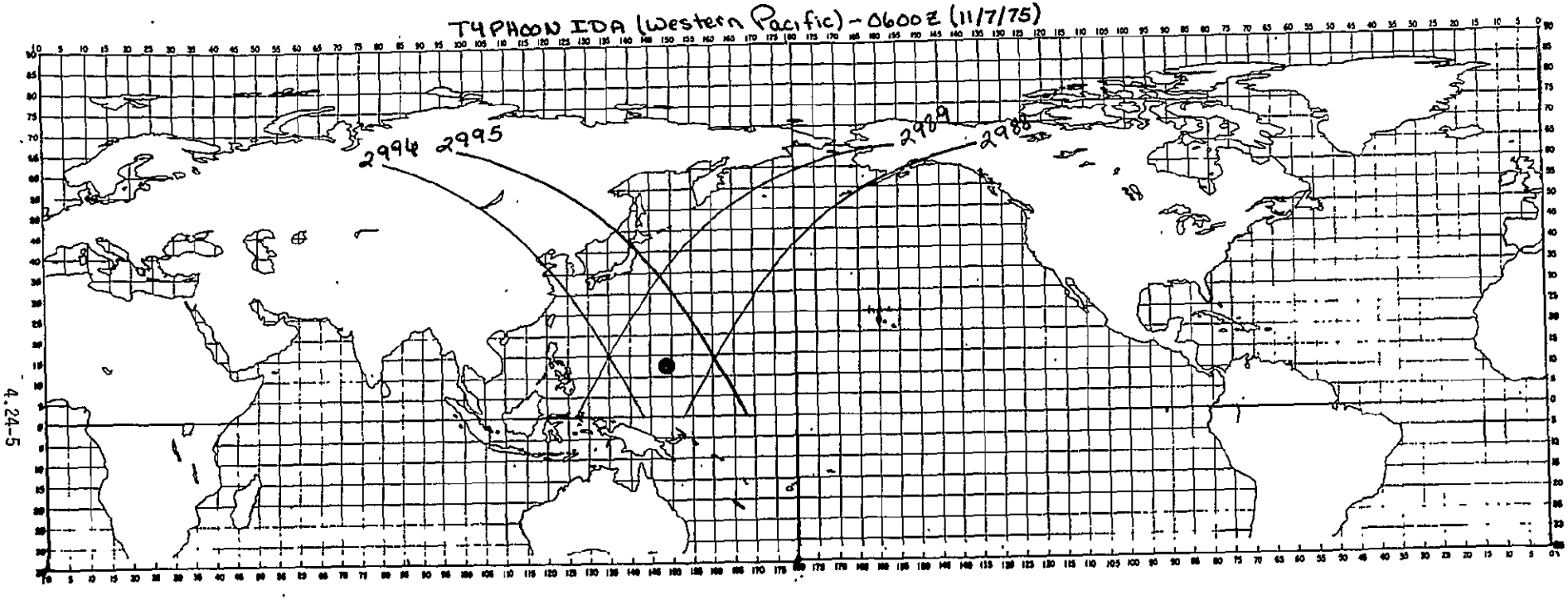
LOCATION*

Tropical Depression

TIME	LATITUDE	LONGITUDE
0600Z	11.0N	150.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2974	-19.84	04 27 43 Z	0516 Z	Do			
2975	-45.17	06 09 30 Z	0654 Z	Do			
2981	162.88	16 20 13 Z	1625 Z	Do			
2982	137.56	18 02 00 Z	1804 Z	Do			

* Position estimated from track map, page 4.24-2.



4.24-5

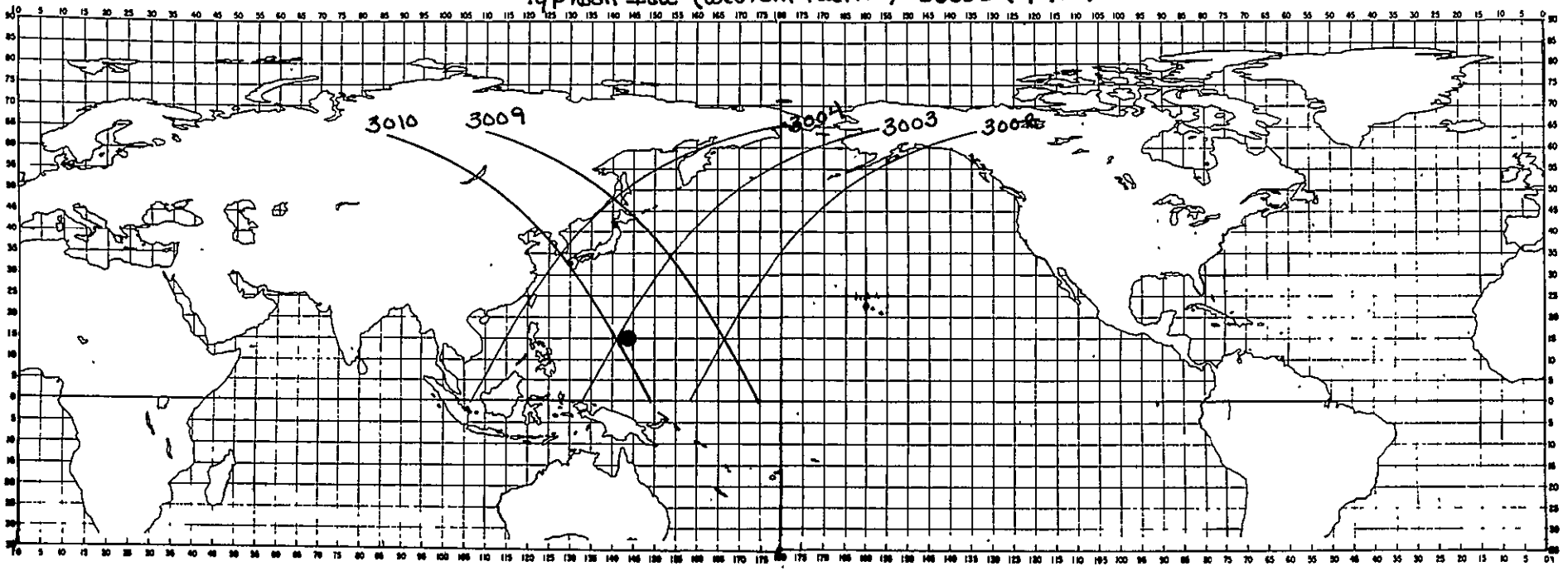
LOCATION*

TIME	LATITUDE	LONGITUDE
0600Z	13.5N	149.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
2988	-14.37	04 12 42 Z	0501Z	No			
2989	-39.69	05 54 29 Z	0639Z	No			
2995	168.36	16 05 12 Z	1610Z	No			
2996	143.03	17 46 59 Z	1749Z	No			

* Position estimated from trackmap, page 4.24-2.

Typhoon Ida (Western Pacific) - 0600Z (11/8/75)



4.24-6

LOCATION*

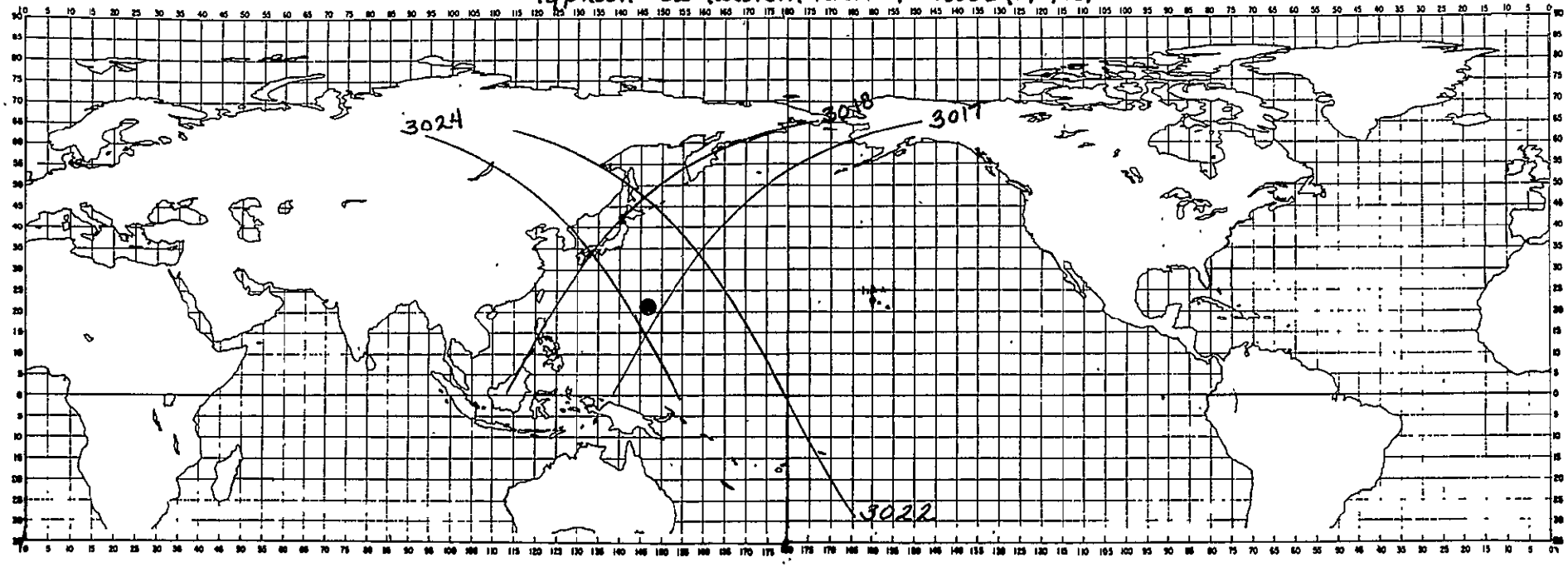
Tropical Storm

TIME	LATITUDE	LONGITUDE
0600Z	15.0 N	149.0 E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3002	- 8.89	03 57 41 Z	0446 Z	No			
3003	-34.22	05 39 28 Z	0625Z	No			
3004	-59.54	07 21 15 Z	0802Z	No			
3009	173.83	15 50 11 Z	1558Z	No			
3010	148.61	17 31 58 Z	1736Z	No			

*Position estimated from track map - page 4.24-2.

Typhoon Ida (Western Pacific) - 1800Z (11/9/75)



4.24-7

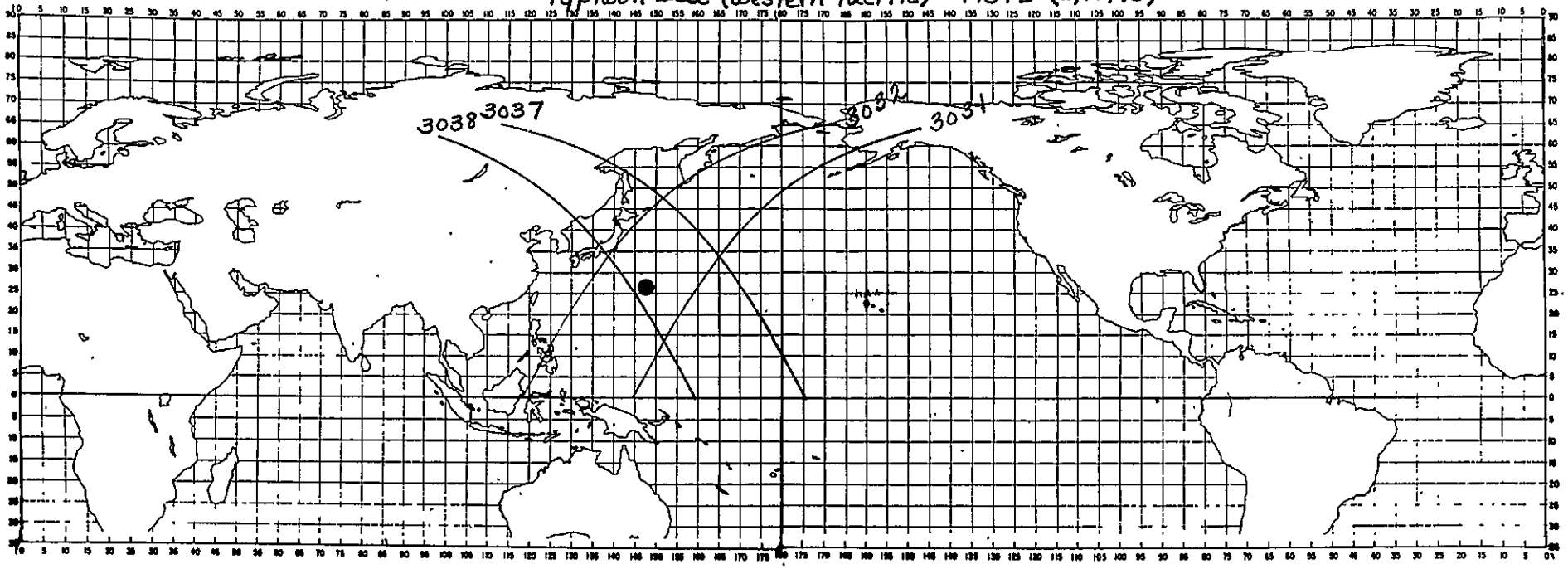
LOCATION* Typhoon

TIME	LATITUDE	LONGITUDE
1800Z	21.0 N	146.0 E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3017	-28.74	05 24 27 Z	0609Z	Do			
3018	-54.07	07 06 15 Z	0747Z	Do			
3022	-155.36	13 53 23	1545Z	152151	153206	802	584
3024	153.98	17 16 57 Z	1723Z	Do			

*Position estimated from track map, page 4.24-2.

Typhoon Ida (Western Pacific) - 1437Z (11/10/75)



4.24-8

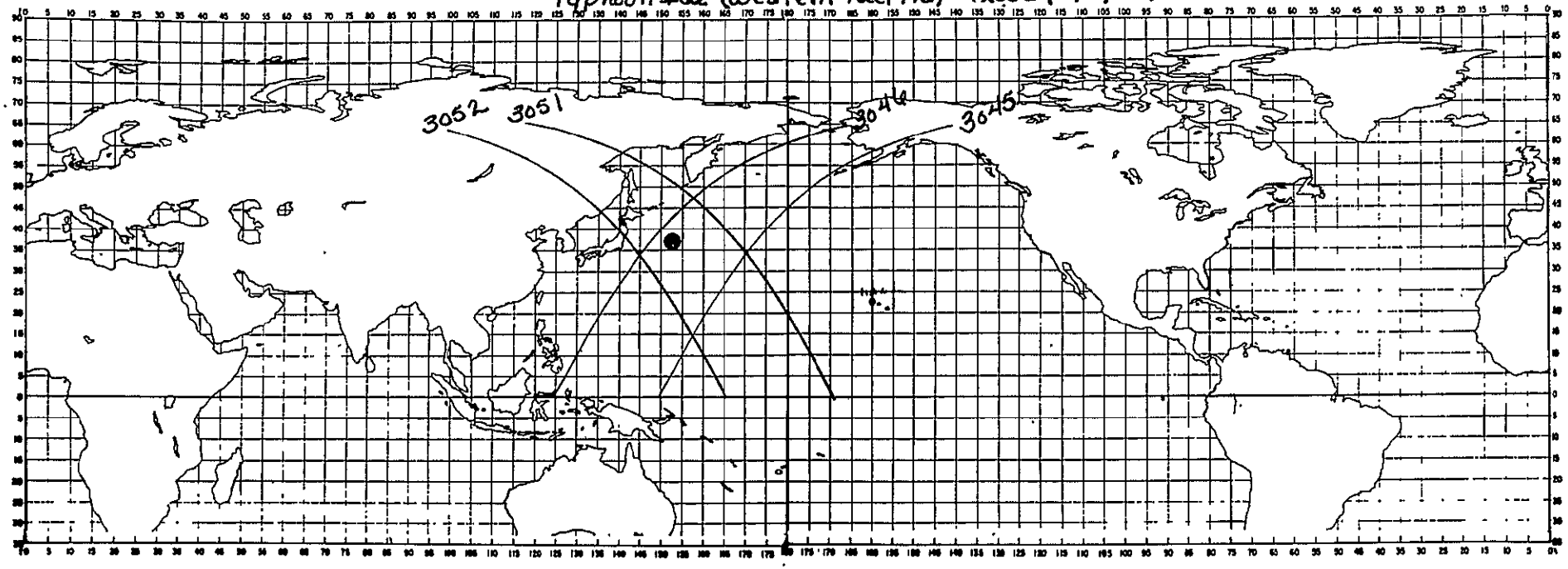
LOCATION*

TIME	LATITUDE	LONGITUDE
1437Z	27.0N	148.0N

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3031	-23.27	05 09 27 Z	0553Z	Do			
3032	-48.59	06 51 14 Z	0732Z	Do			
3037	-175.20	15 20 08 Z	1532Z	Do			
3038	159.47	17 01 55 Z	1710Z	Do			

* Position estimated from track map - page 4.24-2.

R-3



LOCATION*
Extratropical

TIME	LATITUDE	LONGITUDE
1200Z	37.0N	153.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3045	-17.78	04 54 24 Z	0537Z	No			
3046	-43.11	06 36 12 Z	0715Z	No			
3051	-169.72	15 05 07 Z	1519Z	No			
3052	164.94	16 46 54 Z	1657Z	No			

*Position estimated from track map - page 4.24-2.

TYPHOON JUNE

(16 November - 24 November, 1975)

Meteorological History/Data

The last typhoon of the year was to become the most intensive on record. At 0843Z on 19 November, reconnaissance aircraft measured a record low 700 mb height of 1984 m while traversing the eye and obtained a coincident minimum sea level pressure (MSLP) of 876 mb (25.87 in) by dropsonde near the cloud wall. This observation was the lowest on record, slightly lower (1 mb) than Typhoons Ida in 1958 and Nora in 1973. June's central pressure well surpasses the lowest Western Hemisphere reading (892.3 mb), and that obtained by aircraft in Hurricane Camille (905 mb).

June had been under frequent surveillance by satellite and aircraft since her birth in the central Carolines on the 16th. Initially, the system moved slowly westward, becoming quasi-stationary near 6N 143E (445 nm south of Guam), the result of weak steering flow near the equator.

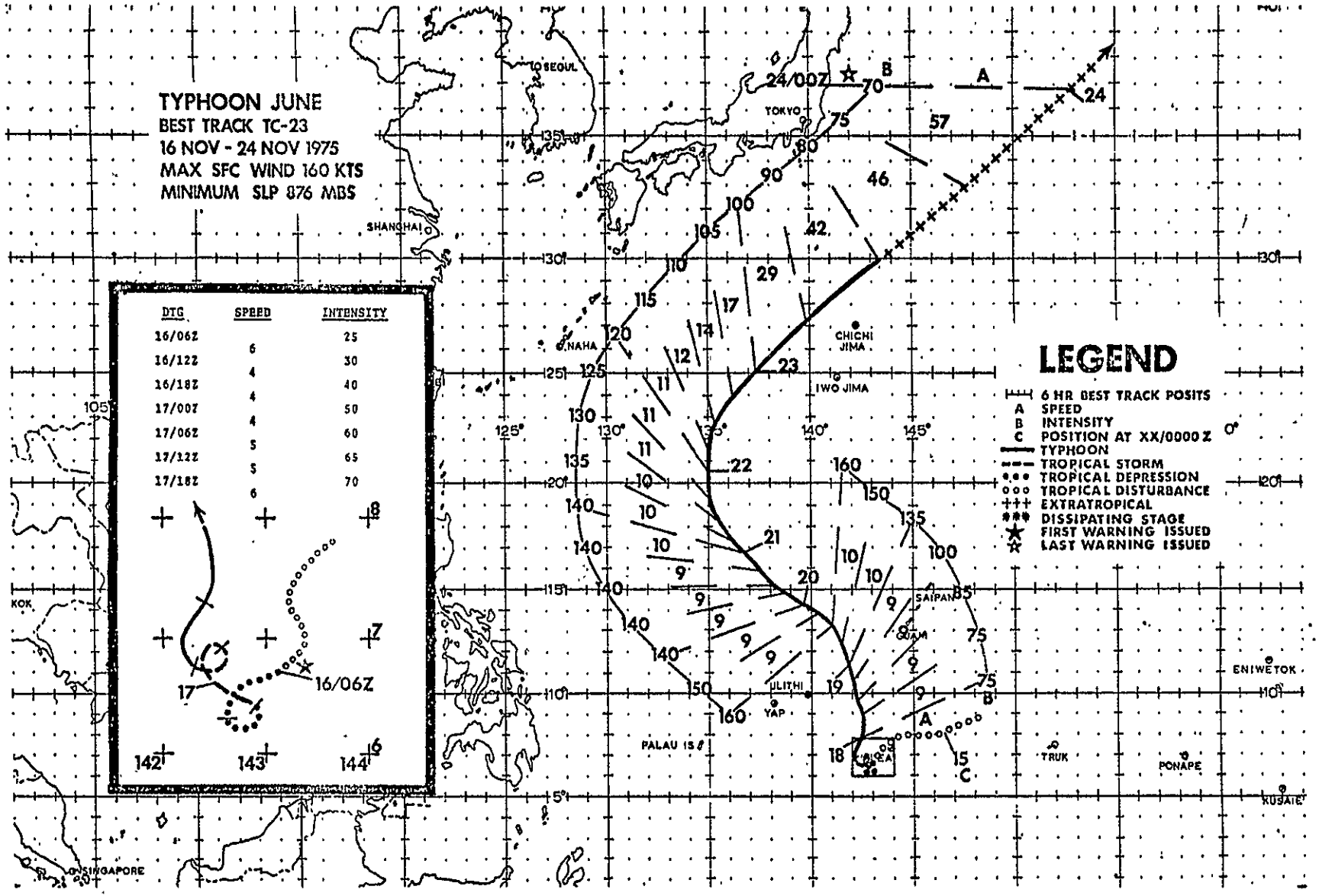
On the 18th, June began to move northward, perhaps in response to a weakness in the 500 mb ridge caused by a deep trough approaching from the west. Simultaneously, June began to rapidly deepen, her surface pressure plummeting 52 mb in 11 hours and 90 mb in 24 hours. By the 19th, the winds of Super Typhoon June had increased to an estimated 160 knots as the typhoon reached its lowest pressure, some 230 nm west-southwest of Guam. As June tracked north-northwest toward a weakness in the 500 mb ridge, the system reached exceptionally large proportions. Sustained surface winds of 50 knots or greater extended 200 nm outward from the center.

After passing abeam of Guam, Super Typhoon June turned northwest. On the 22nd, June began recurving toward northeast with maximum winds down to 115 knots. On the 23rd, the storm began accelerating rapidly in the strong westerlies and its forward speed reached nearly 60 knots with an influx of cold air. June became extratropical above 30N, still possessing winds of typhoon intensity.

Damage Estimates

On the evening of the 19th, June passed approximately 200 nm to the west of Guam. More than 3,200 island residents fled into evacuation centers. There was severe flooding in low-lying areas, with several buildings and homes damaged or destroyed by gale force winds and storm surge. A peak gust of 70 knots was recorded at Andersen AFB. Island losses amounted to an estimated $300,000 with most of the damage to crops.

Eauripik Atoll in Tap district suffered severe property and crop damage. Newspaper reports stated that "sizable portions" of the island were washed into the heavy seas, but that no deaths or injuries occurred. Flooding and crop damage were also reported on Woleai Atoll and on other low-lying islands in Yap district; however, no casualties were reported on any of the islands.

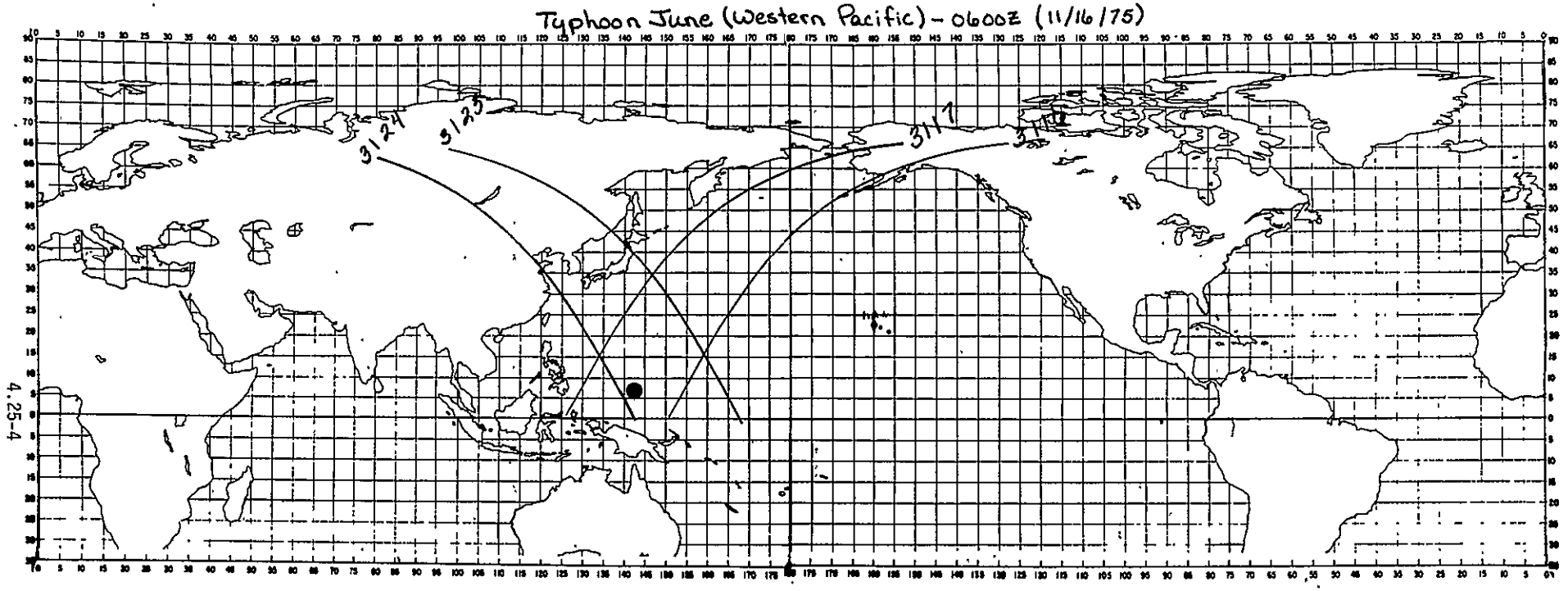

TYPHOON JUNE
BEST TRACK TC-23
16 NOV - 24 NOV 1975
MAX SFC WIND 160 KTS
MINIMUM SLP 876 MBS
DTG SPEED INTENSITY
16/06Z 25
16/12Z 6 30
16/18Z 4 40
17/00Z 4 50
17/06Z 4 60
17/12Z 5 65
17/18Z 5 70
16/06Z
17
142
143
144
LEGEND
6 HR BEST TRACK POSITS
A SPEED
B INTENSITY
C POSITION AT XX/0000 Z
TYPHOON
TROPICAL STORM
TROPICAL DEPRESSION
TROPICAL DISTURBANCE
EXTRATROPICAL
DISSIPATING STAGE
FIRST WARNING ISSUED
LAST WARNING ISSUED
24/00Z
SEOUL
TOKYO
SHANGHAI
NAHA
CHICHI JIMA
IWO JIMA
SAIPAN
GUAM
ULITHI
YAP
PALAU IS
TRUK
PONAPE
ENIWETOK
KUSAIE
SINGAPORE

DISTURBANCE: Typhoon June

DATE: 16 November - 24 November, 1975

Date	Time GMT	Position*		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
11/16	0600Z	6.5N	143.0E			
11/17	0600Z	6.8N	142.5E			
11/18	0600Z	9.0N	142.5E			
11/19	0843Z	12.5N	141.5E	700	160	Super Typhoon
11/20	0600Z	15.0N	138.5E			
11/21	0600Z	17.5N	136.0E			
11/22	0600Z	21.0N	135.0E			
11/23	0600Z	27.0N	140.0E			Extratropical

* Position estimated from track map page 4.25-2



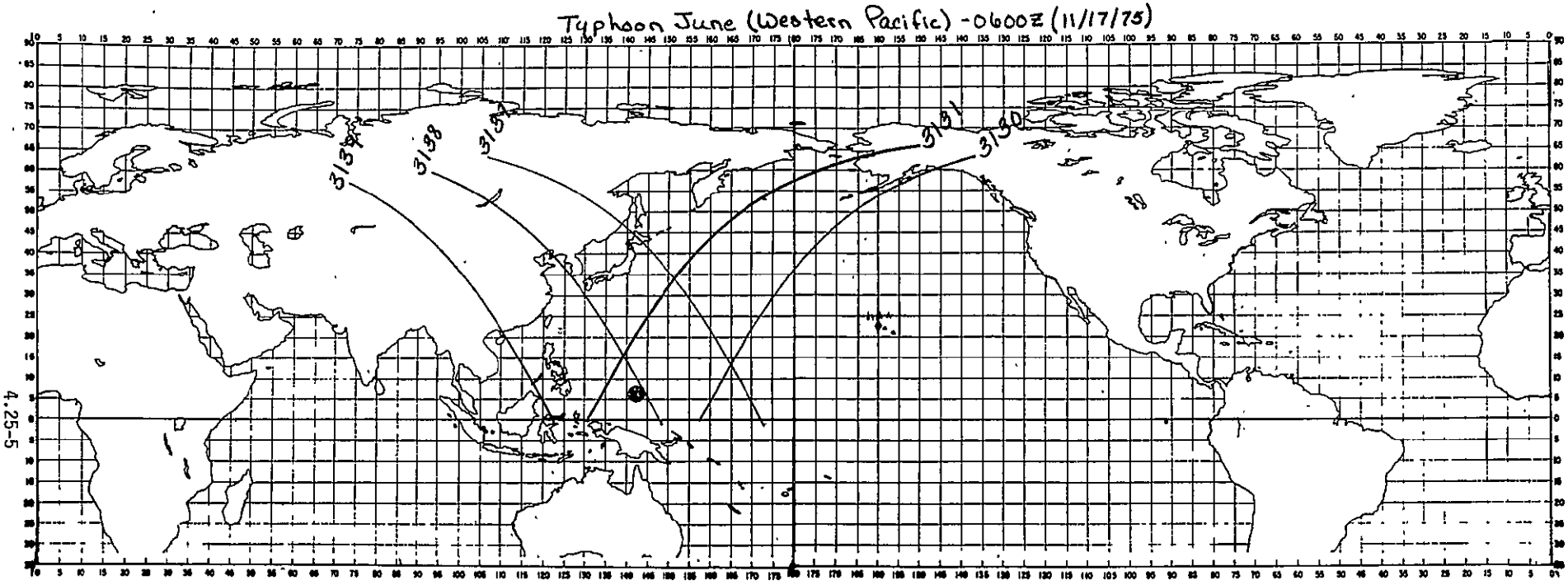
4.25-4

LOCATION*

TIME	LATITUDE	LONGITUDE
0600Z	6.5N	143.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3116	-15.73	05 21 07 Z	0611Z	No			
3117	-41.06	07 02 54 Z	0750Z	No			
3123	167.00	17 13 36 Z	1719Z	No			
3124	141.67	18 55 23 Z	1857Z	No			

* Position estimated from track map, page 4.25-2.

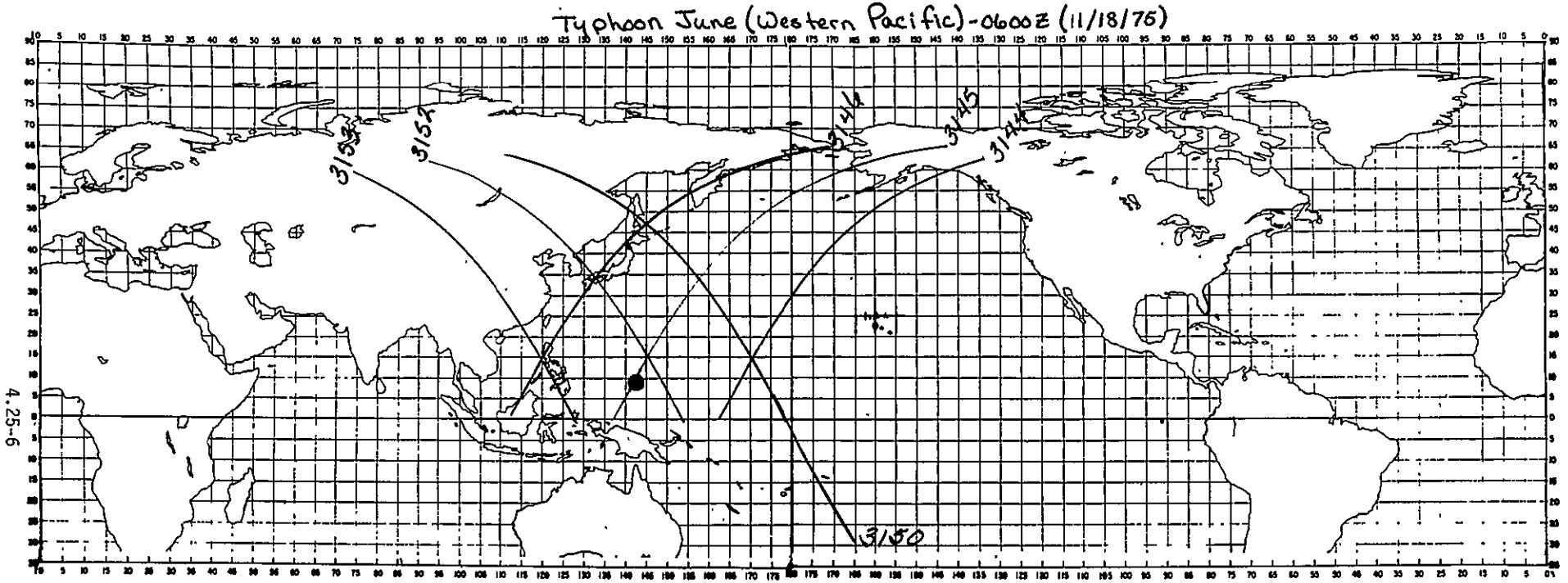


LOCATION*

TIME	LATITUDE	LONGITUDE
0600Z	6.8N	142.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3130	-10.26	05 06 06 Z	0557Z	No			
3131	-35.58	06 47 53 Z	0736Z	No			
3137	172.47	16 58 36 Z	1706Z	No			
3138	147.15	18 40 23 Z	1842Z	No			
3139	121.82	20 22 10 Z	2022Z	No			

*Position estimated from track map - page 4.25-2.

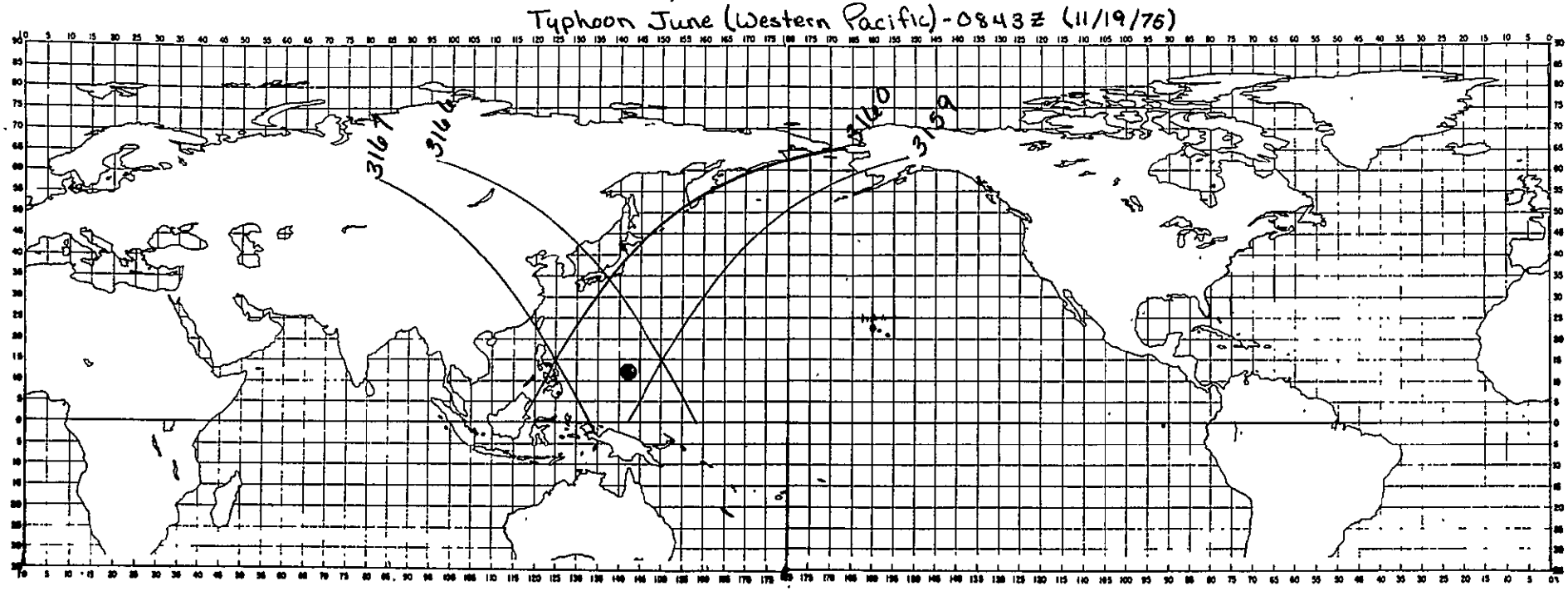


LOCATION*

TIME	LATITUDE	LONGITUDE
0600Z	9.0N	142.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3144	- 4.78	04 51 06 Z	0542Z	Do			
3145	-30.11	06 32 53 Z	0721Z	Do			
3146	-55.43	08 14 40 Z	0900Z	Do			
3150	-156.72	15 01 48 Z	1653Z	163008	165621	802	658
3152	152.63	18 25 22 Z	1828Z	Do			
3153	127.30	20 07 10 Z	2007Z	Do			

*Position estimated from track map-page 4.25-2.



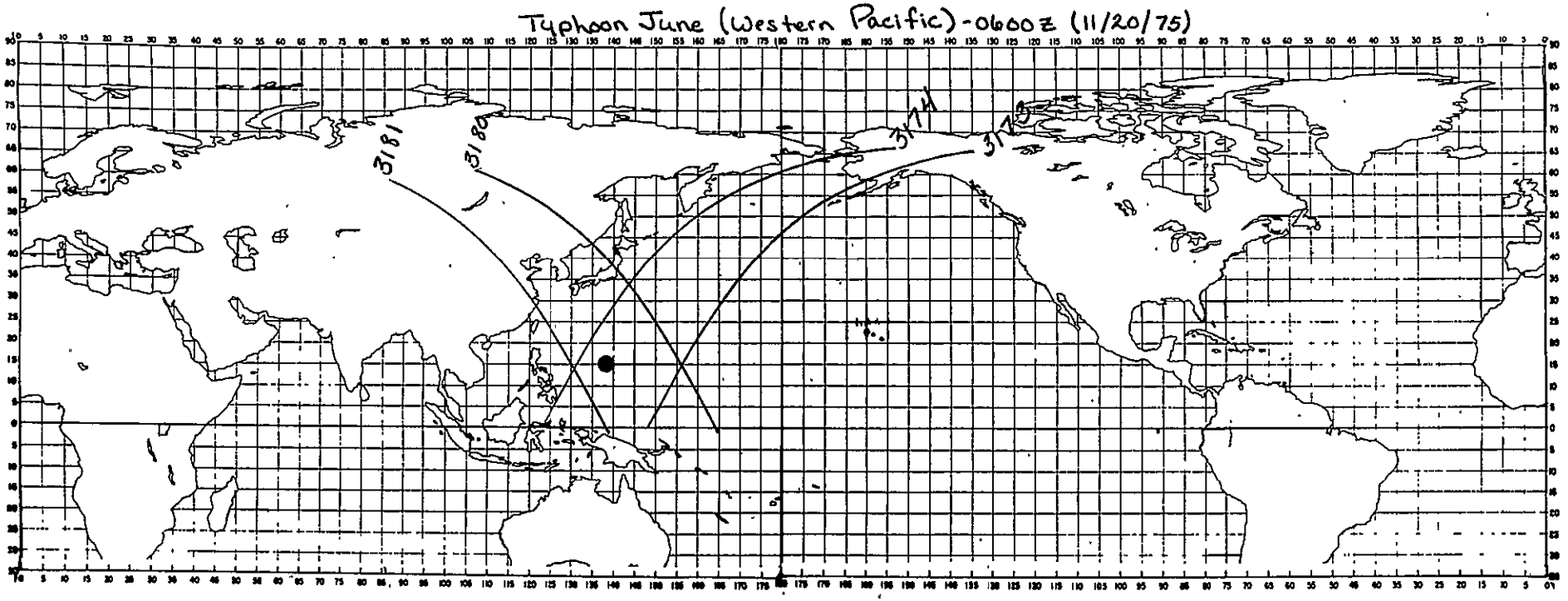
4.25-7

LOCATION*
Super Typhoon

TIME	LATITUDE	LONGITUDE
0843Z	12.5N	141.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3159	-24.63	06 17 52 Z	0706Z	Do			
3160	-19.95	07 59 39 Z	0845Z	Do			
3166	158.09	18 10 22 Z	1815Z	Do			
3167	132.77	19 52 09 Z	1953Z	Do			

*Position estimated from track map - page 4.25-2.

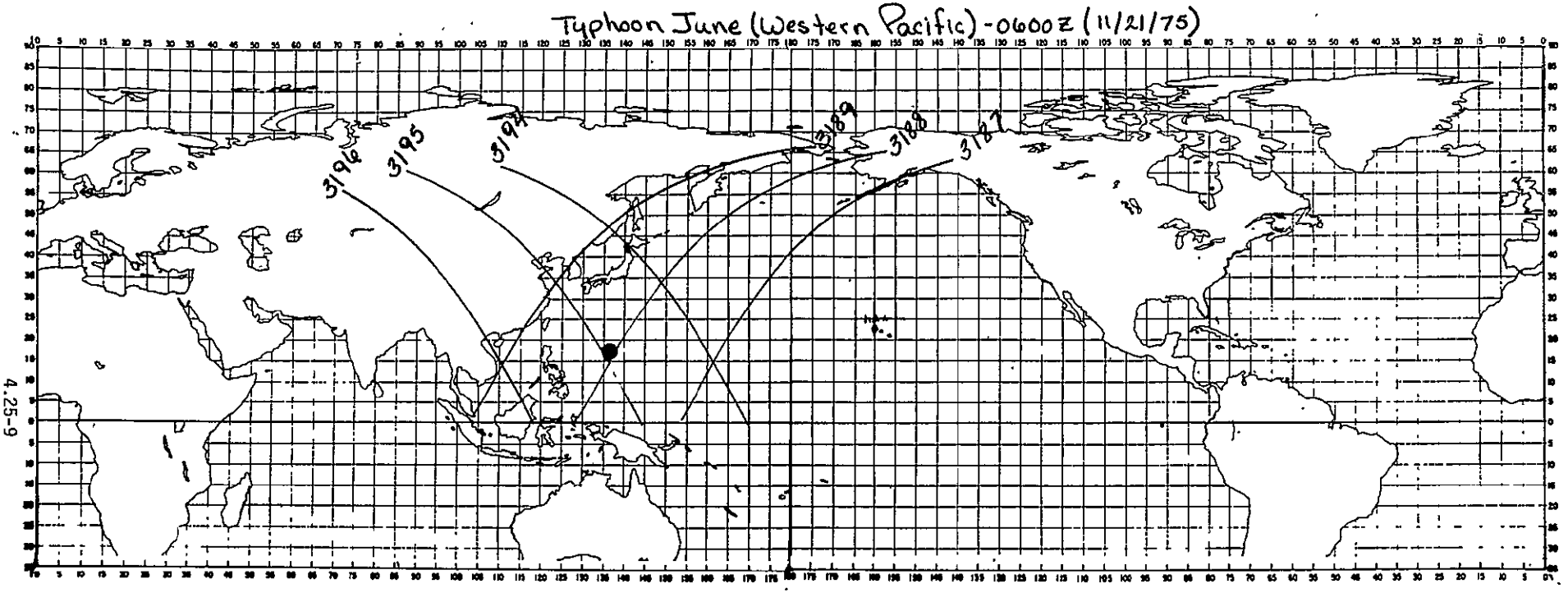


LOCATION *

TIME	LATITUDE	LONGITUDE
0600Z	15.0N	138.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3173	-19.16	06 02 51 Z	0652Z	Do			
3174	-44.48	07 44 38 Z	0830Z	Do			
3180	163.57	17 55 21 Z	1803Z	Do			
3181	138.25	19 37 08 Z	1941Z	Do			

* Position estimated from track map - page 4.25-2.



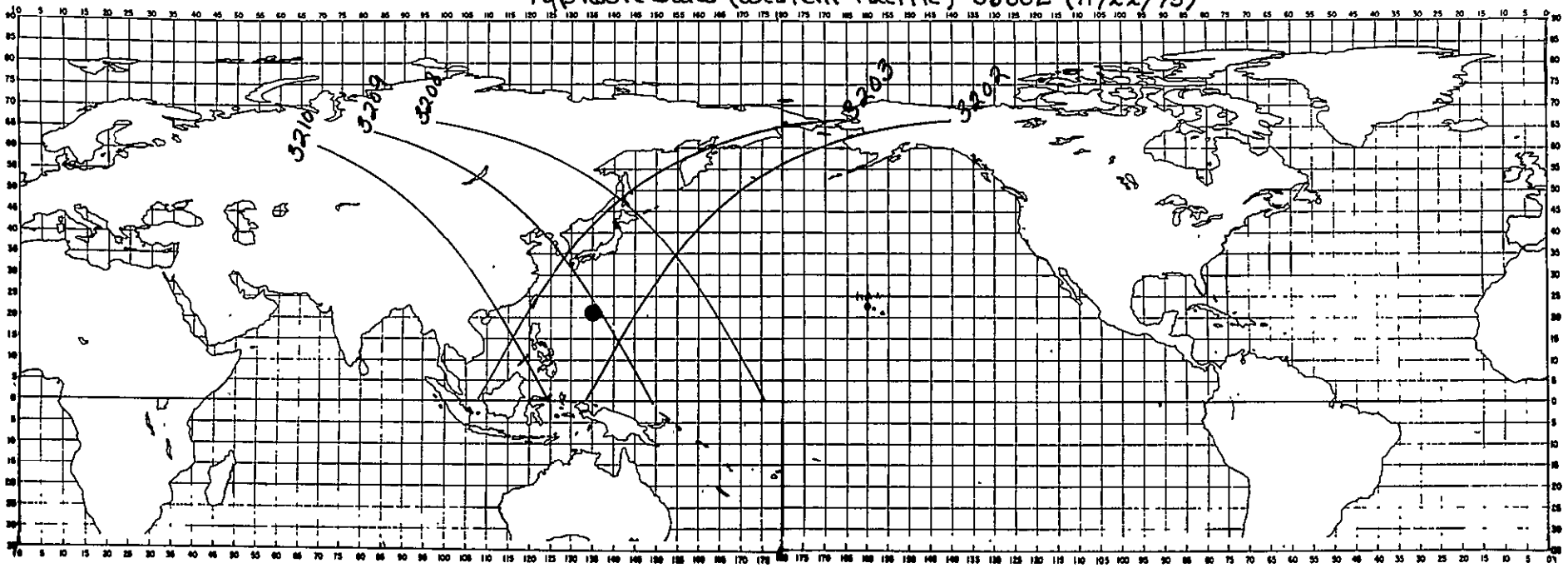
LOCATION*

TIME	LATITUDE	LONGITUDE
0600Z	17.5N	136.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3187	-13.68	05 47 50 Z	0637Z	No			
3188	-39.00	07 29 37 Z	0816Z	No			
3189	-64.33	09 11 24 Z	0953Z	No			
3194	169.04	17 10 20 Z	1750Z	No			
3195	143.72	19 22 07 Z	1927Z	No			
3196	118.40	21 03 54 Z	2105Z	No			

* Position estimated from track map - page 4.25-2.

Typhoon June (Western Pacific) - 0600Z (11/22/75)

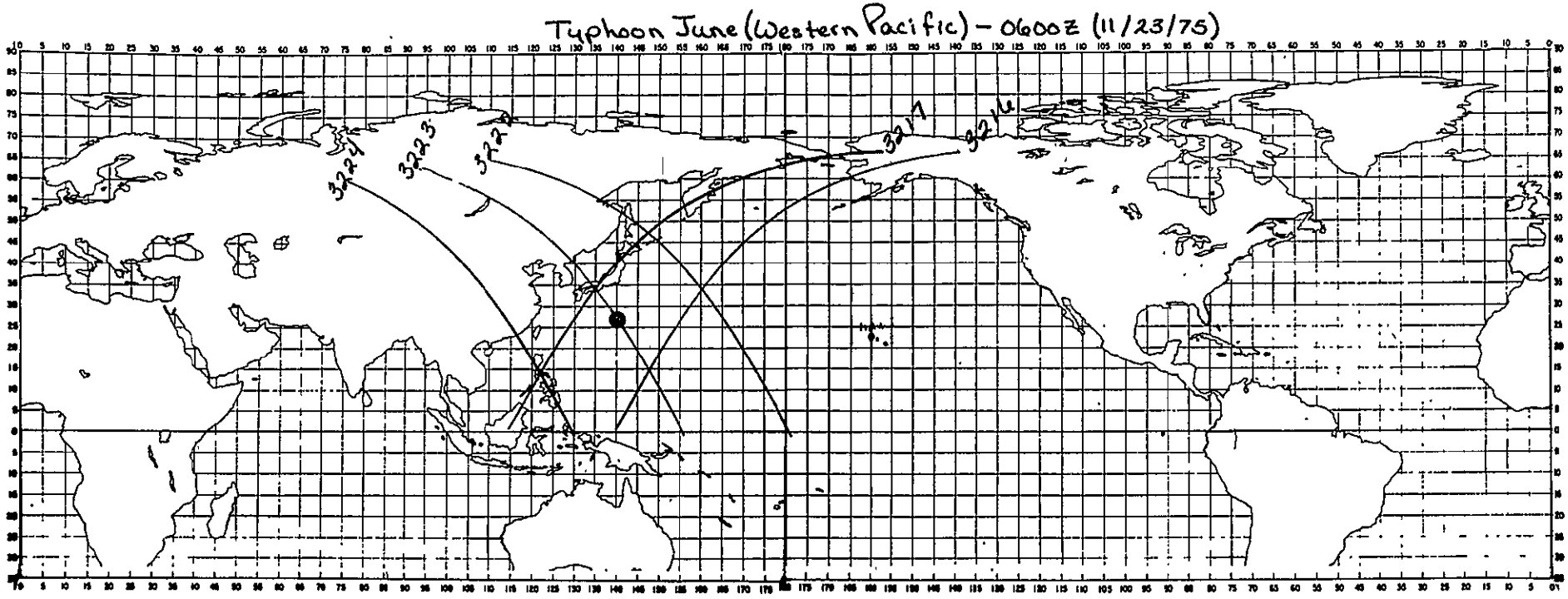


LOCATION*

TIME	LATITUDE	LONGITUDE
0600Z	21.0N	135.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3202	-33.53	07 14 36 Z	0801Z	No			
3203	-58.85	08 56 23 Z	0938Z	No			
3208	174.52	17 25 19 Z	1737Z	No			
3209	149.20	19 07 06 Z	1914Z	No			
3210	123.87	20 48 53 Z	2052Z	No			

*Position estimated from track map - page 4.25-2.



LOCATION*
Extratropical

TIME	LATITUDE	LONGITUDE
0600Z	27.0N	140.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3216	-28.05	06 59 35 Z	0745Z	Do			
3217	-53.38	08 41 22 Z	0922Z	Do			
3222	-179.99	17 10 18 Z	1724Z	Do			
3223	154.67	18 52 05 Z	1900Z	Do			
3224	129.35	20 33 52 Z	2039Z	Do			

* Position estimated from track map - page 4.25-2.

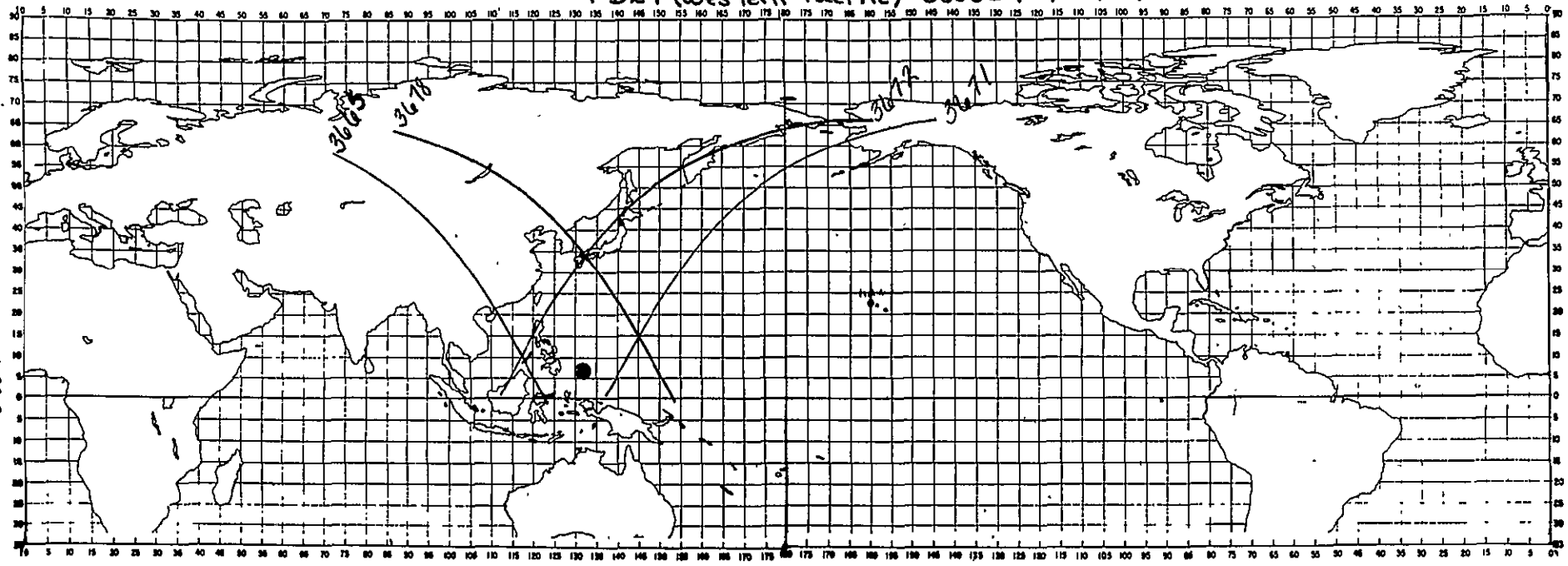
DISTURBANCE: TD24

DATE: December 25 - December 28, 1975

Date	Time GMT	Position *		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
12/25	0000Z	7.0N	131.0E			Tropical Disturbance
12/26	0000Z	10.0N	127.5E			Tropical Disturbance
12/27	0000Z	13.5N	124.5E			Tropical Depression
12/28	0000Z	14.5N	121.0E			Tropical Depression

* Positions estimated from track map - see page 4.1-5.

TD24 (Western Pacific) - 0000Z (12/25/75)



4.26-2

LOCATION*

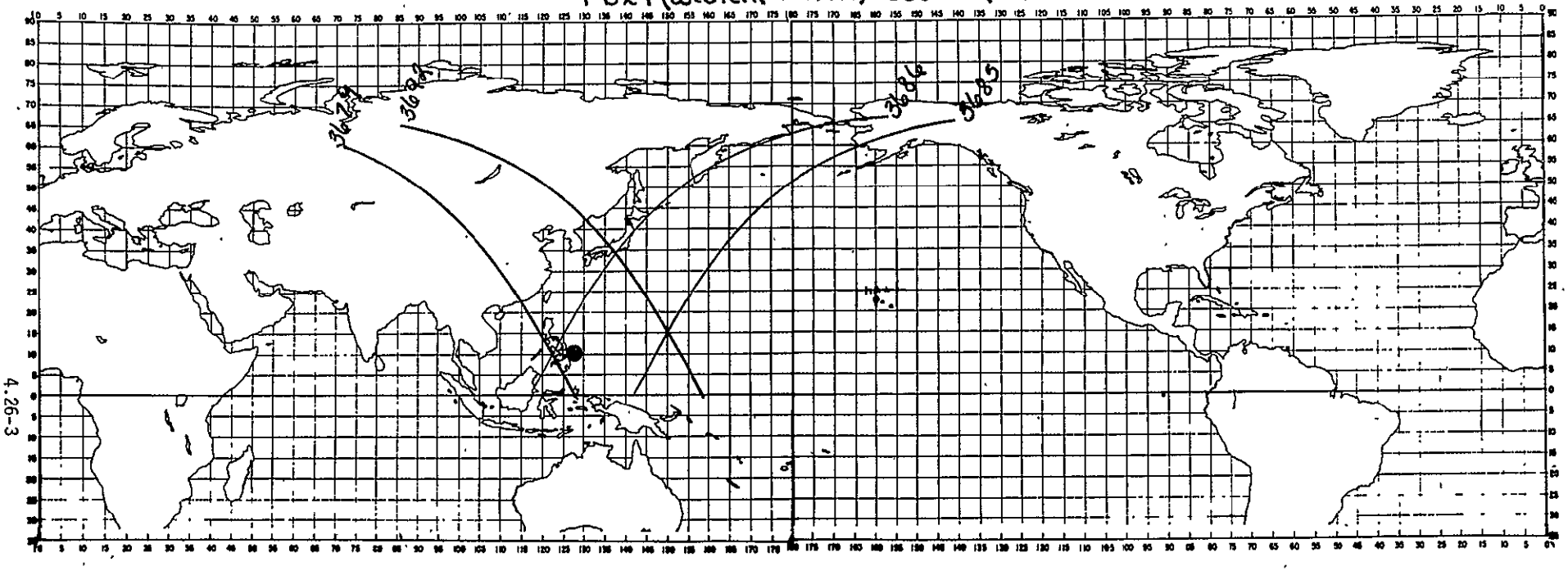
Tropical Disturbance

TIME	LATITUDE	LONGITUDE
0000Z	7.0N	131.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3665	121.85	00 40 47 Z	0041Z	No			
3671	-30.08	10 51 29 Z	1141Z	No			
3672	-55.41	12 33 17 Z	1320Z	No			
3678	152.65	22 43 59 Z	2249Z	No			

* Position estimated from track map - page 4.1-5.

TD24 (Western Pacific) - 0000Z (12/26/75)



4.26-3

LOCATION*

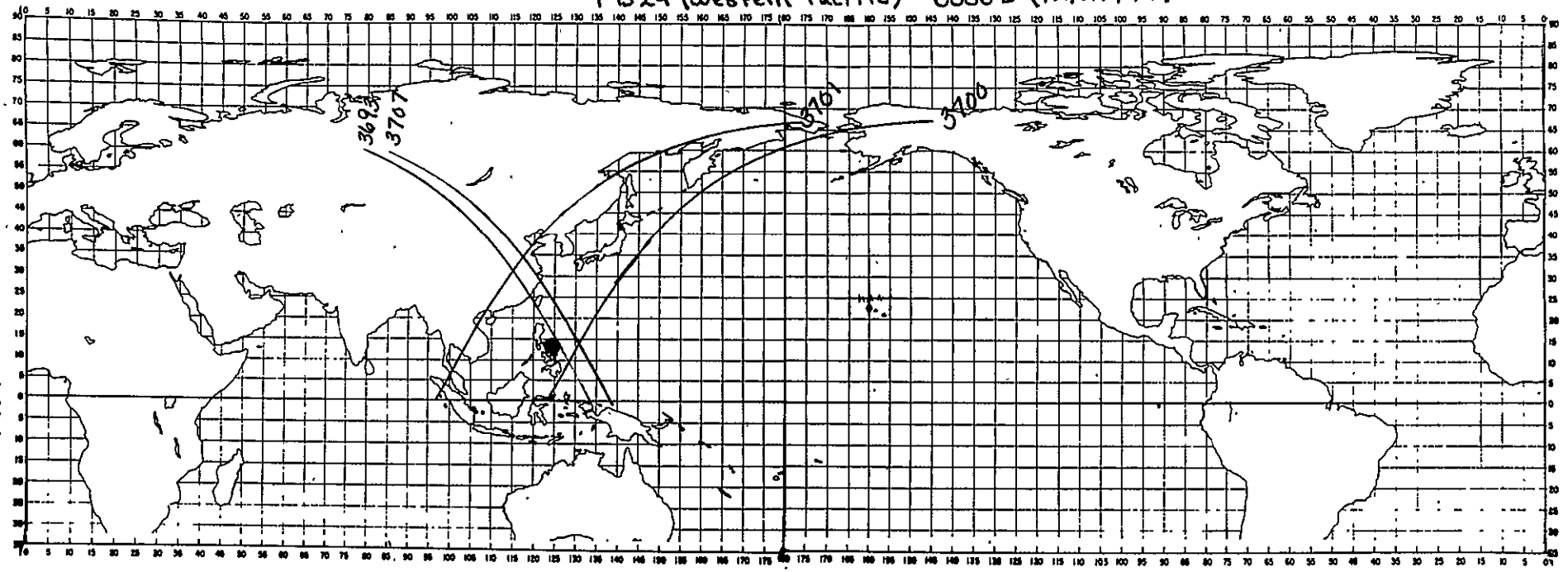
Tropical Disturbance

TIME	LATITUDE	LONGITUDE
0000Z	10.0N	127.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3679	127.32	00 23 46 Z	0027Z	Do			
3685	-24.60	10 36 28 Z	1126Z	Do			
3686	-49.93	12 18 15 Z	1305Z	Do			
3692	158.12	22 28 58 Z	2237Z	Do			

*Position estimated from track map, page 4.1-5.

TD 24 (Western Pacific) – 0000 Z (12/27/75)



LOCATION *

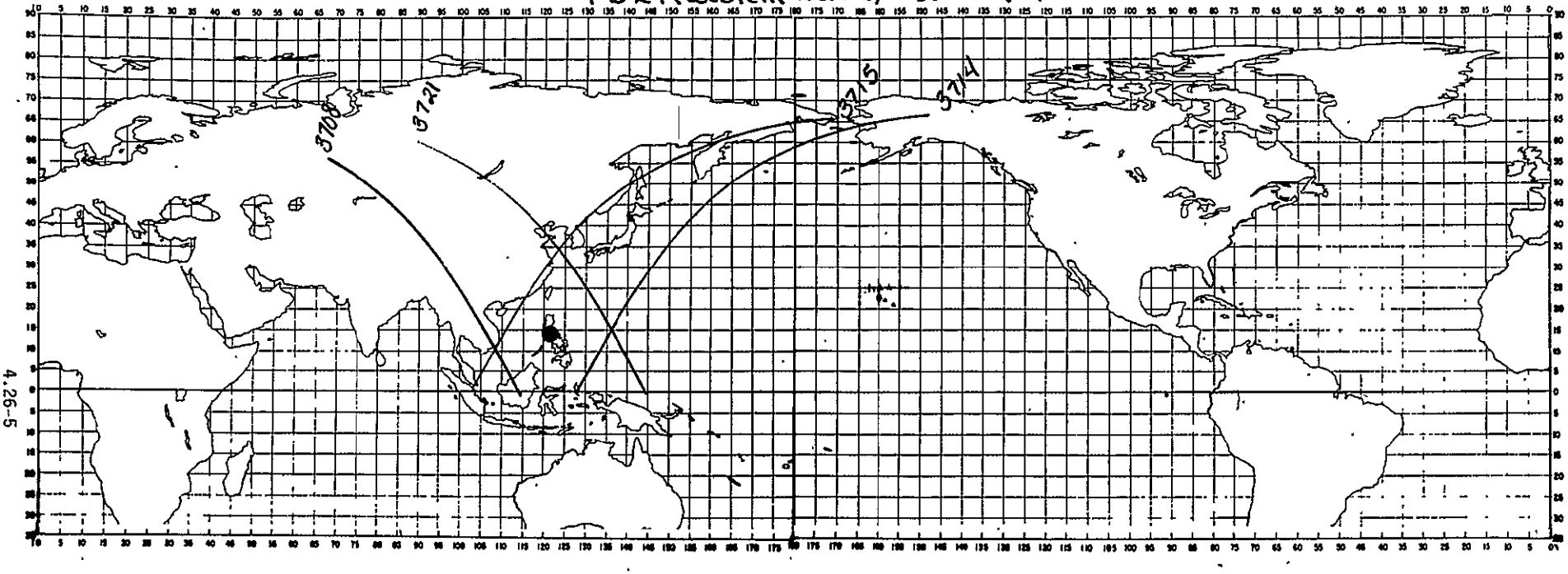
Tropical Depression

TIME	LATITUDE	LONGITUDE
0000Z	13.5 N	124.5 E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3693	132.80	00 10 45 Z	0015 Z	Do			
3700	-44.45	12 03 14 Z	1251 Z	Do			
3701	-69.77	13 45 01 Z	1439 Z	Do			
3707	138.28	23 55 44 Z	2401 Z	Do			

* Position estimated from track map – page 4.1-5.

TD 24 (Western Pacific) - 0000Z (12/28/75)



4.26-5

LOCATION *
Tropical Depression

TIME	LATITUDE	LONGITUDE
0000Z	14.5N	121.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3708	112.95	01 37 31 Z	0140Z	Do			
3714	-38.97	11 48 13 Z	1247Z	Do			
3715	-64.30	13 30 00 Z	1415Z	Do			
3721	143.75	23 40 43 Z	2348Z	Do			

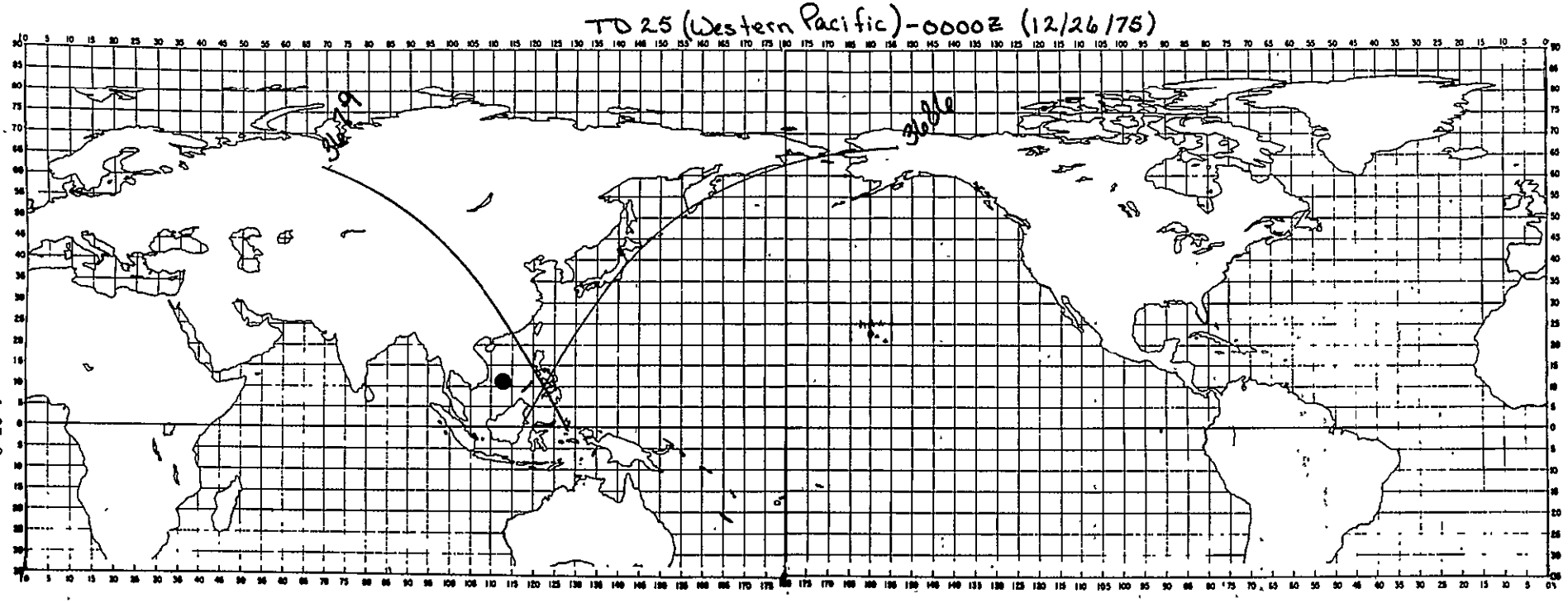
* Position estimated from track map - page 4.1-5.

DISTURBANCE: TD25

DATE: December 26 - December 29, 1975

Date	Time GMT	Position*		Pressure (MB)	Wind (KTS)	Stage
		Latitude	Longitude			
12/26	0000Z	11.0N	113.0E			Tropical Disturbance
12/27	0000Z	11.0N	114.5E			Tropical Depression
12/28	0000Z	10.0N	115.5E			Tropical Depression
12/29	0000Z	8.5N	117.0E			Tropical Depression

* Positions estimated from track map - see page 4.1-5.



4.27-2

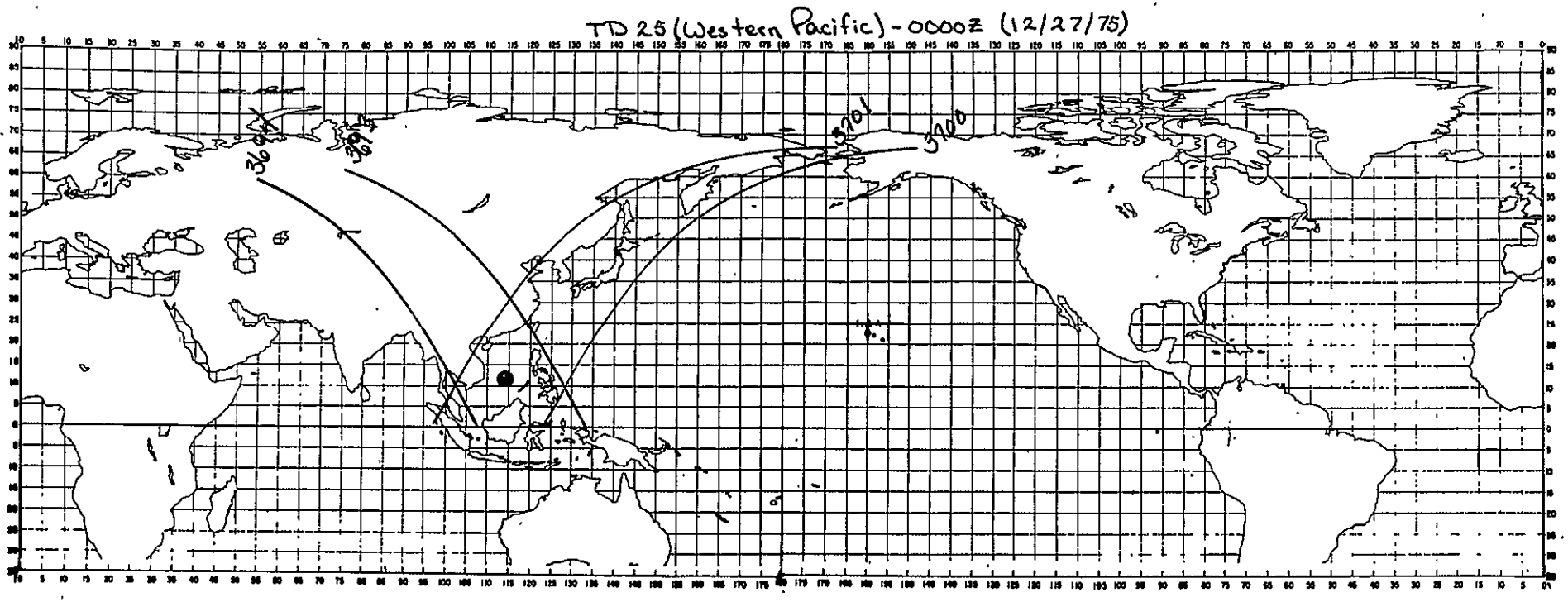
LOCATION*

Tropical Disturbance

TIME	LATITUDE	LONGITUDE
0000Z	11.0N	113.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3679	127.32	00 25 46 Z	0115Z	Do			
3686	-49.93	12 18 15 Z.	1223Z	Do			

* Position estimated from track map - page 4.1-5.



LOCATION *

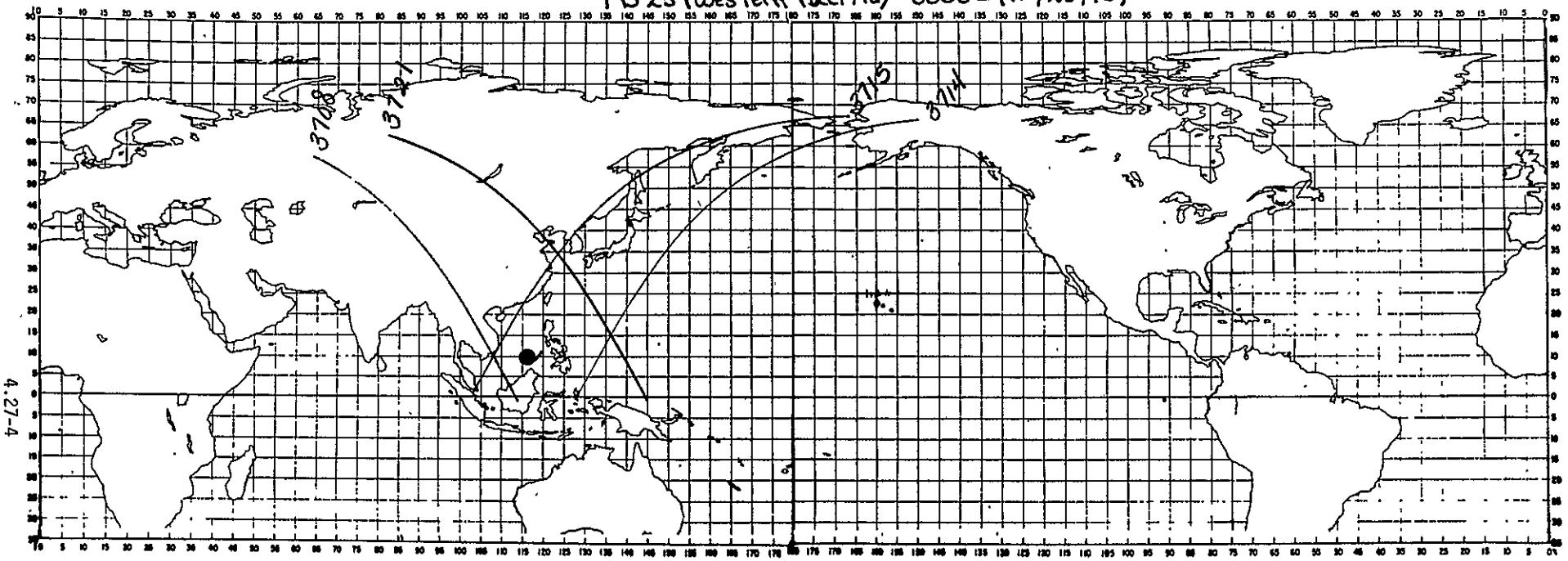
Tropical Depression

TIME	LATITUDE	LONGITUDE
0000Z	11.0 N	114.5 E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3693	132.80	00 10 45 Z	0016Z	Do			
3694	109.48	01 52 32 Z	0155Z	Do			
3700	-44.45	12 03 14 Z	1252Z	Do			
3701	-69.77	13 45 01 Z	1431Z	Do			

* Position estimated from track map - page 4.1-5.

TD 25 (Western Pacific) - 0000Z (12/28/75)



4.27-4

LOCATION *

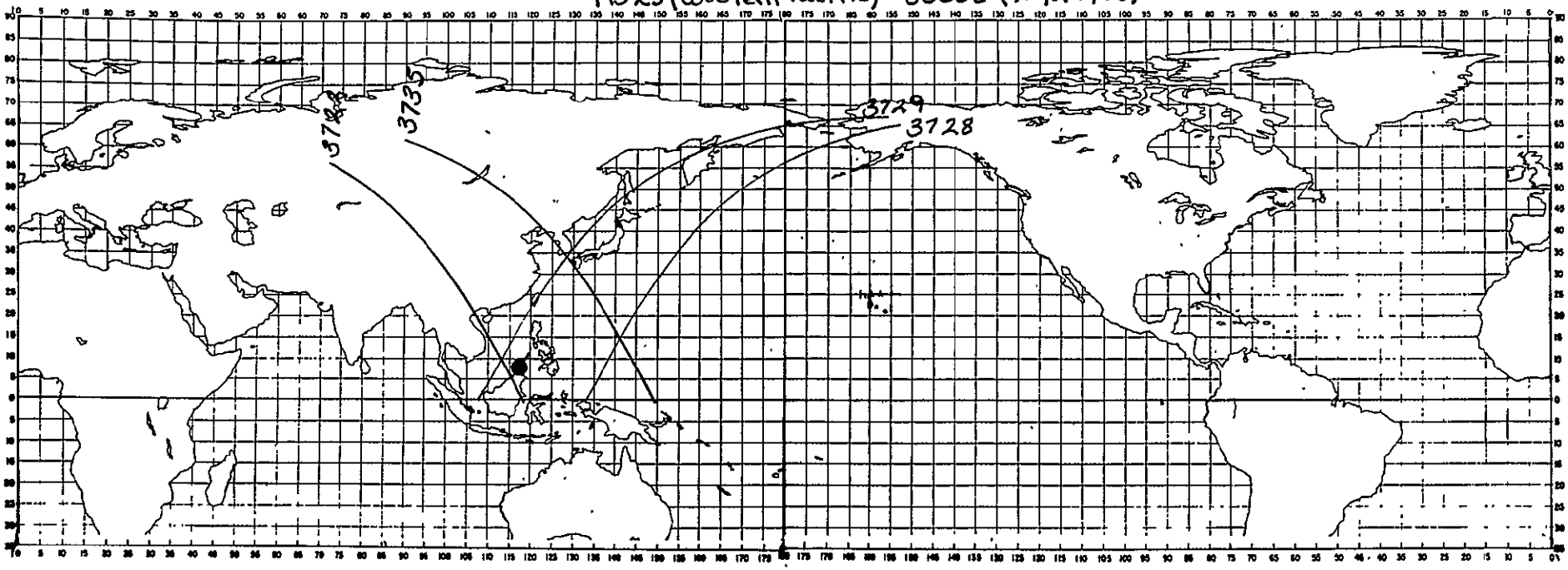
Tropical Depression

TIME	LATITUDE	LONGITUDE
0000Z	10.0N	115.5E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3708	112.95	01 37 31 Z	0141Z	No			
3714	-38.97	11 48 13 Z	1239Z	No			
3715	-64.30	13 30 00Z	1417Z	No			
3721	143.75	23 40 43 Z	2348Z	No			

* Positions estimated from track map - page 4.1-5.

TD 25 (Western Pacific) - 0000Z (12/29/75)



4.27-5

LOCATION *

Tropical Depression

TIME	LATITUDE	LONGITUDE
0000Z	8.6N	117.0E

ORBIT	EQUATOR CROSSING	TIME OF EQUATOR CROSSING	APPROXIMATE PCA	ON	OFF	MODE	UNIQ.#
3722	118.43	01 22 30 Z	0124Z	No			
3728	-33.50	11 33 12 Z	1224Z	No			
3729	-58.82	13 14 59Z	1403Z	No			
3735	149.23	23 25 41 Z	2334Z	No			

* Position determined from track map - page 4.1-5.

APPENDIX A

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEETS (CENTRAL & WESTERN PACIFIC)

Source Material

DISTURBANCE NAME OR NUMBER TD #2 OCEANIC AREA W. Pac MONTH APR 75

DATE TIME	TYPE OF DATA	D S W	DD. EXP. T	DATA PRELIM T CF	DATA PRELIM T BF	DATA PRELIM T T	PAT-TERN COMP.	FINAL T	FINAL C.I.	C.F. 1 2 3	R S A	+ or -	FCST C.I.	Code D T( )/( )±/S( )/( )HRS W	POSITION INFORMATION PRESENT Lat.	PRESENT Long.	PRESENT C.F.	FCST Lat.	FCST Long.	INT L	QUALITY CONTROL PRELIM CF	PRELIM BF	FINAL T	FINAL C.I.
19/2330	VIS	D	15	1.5	0	1.5	C?	1.5	1.5	1			2	T1.5/1.5/D0.5/24HRS	E 2.7N	136E	✓							
20/1150Z	IR	S 12HR	12HR 1.5	1.5	0	1.5		1.5	1.5	1			2	T1.5/1.5/D0.5/24HRS	5.5N	131E	2							
21/0015	VIS	S	1.5	1.5	0	1.5			1.5	1			2	T1.5/1.5/D0.5/24HRS	E 7.3N	127.3E	✓							
21/1945	IR	Below						and	associated															
22/0100	VIS	D	2	2	0	2		2	2	1			3	T2/2/D0.5/24HRS	9.2N	126.3E	2							
22/			TY 8	IR	1172	NO MSG	CNX						NO	CLASSIFICATION	9.8N	121.5E								
22/0005	VIS	D	3	2.5	0	2.5		2.5	2.5	1			3.5	T2.5/2.5/D0.5/24HRS	12.2N	122.8E	1							
23/1214	IR	S	2.5	2.5	0	2.5		2.5	2.5	2			2.5	T2.5/2.5/S0/12	E 10.5N	121.5E	2							
23/0002	VIS	S	2.5	2.5	0	2.5		2.5	2.5	1		+	3	T2.5/2.5+/S0/24HRS	12N	121E	1							
24/1145	IR	S	2.5	2.5	0	2.5		2.5	2.5	2			2.5	T2.5/2.5/S0/24HRS	E 11N	120.5E	2							
25/0003	VIS	W	1.5	1.5+	0	1.5+		2	2.5	1		+	2.5	T2/2.5PLUS/Wb.5/24HRS	11.5N	120.3E	2				GOES CORRECTION			
25/1232	IR 1.1?	D	12HRS 2.5	2	0	2		2	2	2			3	T2/2/00/12HRS.	E 11N	119.3E	2				ERROR CORR 1/2° TO N.			
26/0057	VIS	D	3	2	0	2		2	2	1			3	T2/2/D0/24HRS	11.3N	117.2E	1							
/		S	2	2	0	2		2	2	1			2	T2/2/00/24HRS	11.5N	115E	2							
27/1153	VIS	S	2	2-	0	2-		2	2	1			2	T2/2/S0/24 HRS	11.5N	113.9E	1							
27/1152Z	NITE IR	S	2	2-	0	2-		2	2	2			2	T2/2/S0/24 Hrs	12N	112.5E	2							
28/0053		Below												low lvl clouds	10N	112E								

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA CENTRAL PACIFIC MONTH July DISTURBANCE NAME OR NUMBER Not carried by Guam

Date Time (Z)	Type Data	DSW	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	RSA	+ or -	Fcst. C.I.	Code	Position Information				Remarks	Intl
				CF	BF	T								Present Lat.	Present long	Fcst Lat.	Fcst Long		
21/2215Z	N4 VIS	D	1.0	1	0	1	(b)	1	1	A		2	T1/1.0 0.5/24	23N	171E			DVLPD FROM ST 24 HRS AGO	
22/0904	IR	D	1.5	1.5	0	1.5		1.5	1.5			2.5	T1.5/1.5/D0.5/12	24.2N	169.2E				
22/2114Z	VIS	D	2	2.5	0	2.5	C	2	2	A		3	T2/2/D1.0/24 HRS	27.0N	169.1	31N	172E		DH
23/0000	IR	D	2.5	2.5	0	2.5		2.5	2.5	A		3.5	T2.5/2.5/D1.0/24 HRS	29N	165.0E				
23/2200	VIS	S	2	2	0	2	a	2	2	A		2	T2/2/S0.0/24 HRS	27.3N	163.2E			Relocated	
24/0901	IR	W	1.5	2	0	2		2	2.5			1.5	T2/2.5/W0.5/24 HRS	E29N	152E			CENTER HAS DRIFTED AWAY FM CONVECTION AND IS DISSIPATING	
24/2304	VIS	W	1.5	1.5	0	1.5		1.5	2	A		1	T1.5/2/W0.5/24 HRS	27N	162E				
25/0958	IR	W	1	1	0	1		1	2			1	T1/2/W1.0/24 HRS	E34N	161E				
25/2203	VIS	W	Fading			limit								34N	161E				

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. Pacific MONTH July DISTURBANCE NAME OR NUMBER MAMIE

Date Time (Z)	Type Data	DSW	Model Exp. T	Data Prelim. T			Pattern Comp	Final T	Final C.I.	RSA	+ or -	Fcst. C.I.	Code	Position Information				Remarks	Intl
				CF	BF	T								Present Lat.	Present long	Fcst Lat.	Fcst Long		
24/0002	VIS	D	1.5	1.5	.5	2	b	2	2	A		3	T2/2/D1.0/24HRS	19N	145.3E			Reclassified date T0	4/25
26/1032	IR	D	2.5	2.5+	0	2.5+	b	2.5	2.5	A		3.5	T2.5/2.5/D1.0/24HRS	20.7N	144E				5DC
26/2302	VIS	D	3	3	0	3		3	3	S	—	3	T3/3-/D1.0/24	21.5N	143.5E			LOW LVL CNTR NR 22.5N, 141.5E	RJK
27/1032	IR	D	3	2.5	0	2.5	f	3	3	S		3	T3/3/S0.0/12HRS	23.2N	139E				5DC
27/2356	VIS	J	3.5	2.5	0	2.5	f	2.5	3.0	S		2	T2.5/3/W0.5/24HRS	23.5N	139.6E				RJK
28/1032	IR	W	2	2.5	0	2.5		2.5	3.0	W		2.5	T2.5/3/W0.5/24	E24.5N	139.5E				5HT
28/2255	VIS	W	1.5	2	0	2		1.5	2.5			1.5	T1.5/2.5/W1.0/24	E26N	135.5E			LOW LVL CNTR NR 27N, 134.5E	RJK
29/1402	IR	W	1.5	1.5	0	1.5	f	1.5	2.5	A		1.5	T1.5/1.5/W1.0/24	E26N	131.5E			RELOCATED 28N 132.5E	5DC
29/2349	VIS	S	1.5	1.5	0	1.5		1.5	1.5			1.5	T1.5/1.5/S0/24	E31N	130E				RJK
30/1412	IR	S	1.5	1.5	0	1.5		1.5	1.5			1.5	T1.5/1.5/S0/24	E33N	129E				5HT

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. PACIFIC MONTH JULY-AUG DISTURBANCE NAME OR NUMBER NINA

Date Time (Z)	Type Data	DSW	Model Exp. T	Data Prelim. T			Pattern Comp	Final T	Final C.I.	RSA	+ or -	Fcst. C.I.	Code	Position Information				Remarks	Intl
				CF	BF	T								Present Lat.	Present long	Fcst Lat.	Fcst Long		
31/0048	VIS	D	1.5	2-	0	2-		1.5	1.5			2.5	T1.5/1.5/D1.0/24HRS	17.2N	134.2E				
31/1133Z	TE	D	12 2	2.5	0	2.5	b	2.0	2.0	A		3.0	T2/2/D0.5/12 HR	17.5N	132.7E				
31/2348	VIS	D	2.5	2-	1+	3		3	3			4	T3/3/D1.5/24HRS	17.1N	132.0E				
01/1215Z	IR	D	3.0	2.5+	1+	3.5+		3.5	3.5	R	+	5	T3.5/3.5+/D1.5/24	20.0N	130.5E				
02/0042	VIS	D	RAPID 4.5	4	1-	5-		4.5	4.5	R	+	6	T4.5/4.5+/D1.5/24	21.8N	127.7E				
02/1130Z	IR	D	RAPID 5	4.5	1	5.5	5c	5.5	5.5	A		6.5	T5.5/5.5/D2.0/24	23.2N	125.1E				
03/0136	VIS	D	5.5	4-	2-	6-		5.5	5.5		-	5.5	T5.5/5.5-/D1.0/24	23.4N	122.2E			WITHIN ONE DEG TAIWAN	
03/1225	IR	W	4	4-	1	5-		4	5		-		(OVR LAND)	24.5N	118E				
04/0036	VIS												over land						

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. PACIFIC MONTH AUG DISTURBANCE NAME OR NUMBER TD-05

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information				Remarks	Intl
				CF	BF	T								Present Lat.	Present long	Fcst Lat.	Fcst Long		
04/0037	VIS	D	1	1	0	1	1.6	1	1			2	T1.1/1.0.5/24HRS	18N	131.5E				28
04/1124	IR	D	1	1	0	1	1.5	1	1			2	T1.1/1.0.5/24HRS	E22.5N	130E				28
05/0337	VIS	D	2	1	0	1	1.a	1	1	SL		2	T1.1/1.0.0/24	E23.5N	122.5E				SH
05/1218	IR	D	2	1	0	1		1	1			2	T1.1/1.0.0/24	E24N	122.5E				KJ
06/0337	VIS	W							No		Class			E15.5N	122.5E				SH
06/1119	IR	D	2	1.5	0	1.5		1.5	1.5			2.5	T1.5/1.5/1.0.0/24	E23.5N	122.5E				KJ
									No	Class				E23N	121.5E				SH
																			1

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA [illegible] A MONTH Aug 1975 DISTURBANCE NAME OR NUMBER ORA

Date Time (Z)	Type Data	DSW	Model Exp. T	Data Prelim. T			Pattern Comp	Final T	Final C.I.	RSA	+ or -	Fcst. C.I.	Code	Position Information Present		Fcst		Remarks	Intl
				CF	BF	T								Lat.	long	Lat.	Long		
Aug 9 01232	VIS	D		0.5	0	0.5	(e)	0.5	0.5				T0.5/0.5 *	E 18N	128E			* NO CLASSIFICATION SENT.	
Aug 9 1215Z	NITE IR	D		2	0	2	(e)	2	2	R		3.5	T2/2 D1.5/24 HRS	20N	125.5E			MESSAGE SENT TO PHILIPPINES + TAIWAN	FJS
10 [illegible]Z	VIS	D	1.5	2.5+	0	2.5+	e	2.5	2.5	R	+	4.0	T2.5/2.5+ /D2.0/24	21.7N	125.5E				SH
10/1109	IR	D	3.0 R3.5	3	.5	3.5		3.5	3.5	R	+	5.0	T3.5/3.5Plus/D1.5/24	23N	124.1E				DC
11/[illegible]Z	VIS	D	4.0	2.5	1	3.5		3.5	3.5	A		4.5	T3.5/3.5/D1.0/24	24.0	124.9			→ SLIGHT GRID ADJUST	LA
11/1206Z	IR	W	3.0	3	0	3	(a)	3	3.5	A		3	T3/3.5 W/0.5/24	26.0N	124.8E				FJS
12/0015	VIS	D	4.5	4+	0	4+	a	4	4	A		5	T4/4/D0.5/24	27.2N	122.7E *			SLIGHT GRID ADJUST	DH
12/1106	IR				(OVER	LAND)								28N	120E				

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA WEST PACIFIC MONTH AUGUST DISTURBANCE NAME OR NUMBER PHYLLIS

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information Present		Fcst		Remarks	Intl
				CF	BF	T								Lat.	long	Lat.	Long		
12/	VIS/IR	D	1	.5		.5		1	1		+	2.5	T1/1 PLUS/D1.0/24	E 13N	132E			NOT MUCH CIRCULATION	D_H
12/	IR	D	1	1.5	0	1.5	(L)	1.5	1.5		+	3	T1.5/1.5/D1.0/24H	E 14N	136E			LARGE AREA CIRRUS CIRCULATION	F_{J_S}
12/23	"	"	2.5	2.5	0	2.5	C	2.5	2.5	R		4	T2.5/2.5/D1.5/24 HRS	13.3N	136.3E				D_H
13/1152	IR MTR	D	3	3	0	3	(L)	3	3			4	T3/3/D1.5/24 HRS	15N	135.5E			EMBEDDED IN LARGE CONVECTIVE AREA	F_{J_S}
14/	VIS	D	4	3+	1.5	4.5-		4.5	4.5			5.5	T4.5/4.5/D2.0/24 HRS	18.4N	136.5E			≈ 1/2 DEG GRID ADJUST STORM HEADING NORTH	D_H
/.59	IR	D	5.5	5.5	1	4.5	b	6	6	R	+	7	T6/6+/D2.0/24HRS	22.9N	136.5E			EMBED ~1°. FIRST 2 CALLS REMAIN. IS T4 - T5.5	F_T
14/	VIS	D	5.5	5	1+	6+	a	6	6		−	6	T6/6 MINUS/D1.0 24	25.7N	13			SLIGHT GRID ADJUST CURVING E OF ARATH, SOME DIFFUSE CLOUDINESS YDA IS T5.0	D_H
15/	IR	S	6	5	1	6	bc	6	6			6	T6/6/S0/24 HRS	28.8N	135.5E				D_S
16/	VIS	W	5	4-	1	5-	C	5	6			5	T5/6/W1.0/24 HRS	29.4N	134.2E			CMHR STILL SIGNS OF RAPID DEEPENING. 2 DVK RADIUS	I_{D_S}
16/1057	IR	W	5	4+	1−	5	e	5	6			5	T5/6/W1.0/24HRS	31N	134E			Central feature 5-1=4 for retrieval use	D_S
17/0058	VIS	W	4	4-	1-	5-	e	4.5	5		−	4	T4.5/5 MINUS/W0.5/24	32.2N	132.7E			LAND EFFECT 12-24 HRS REASON FOR MINUS	I_{D_C}
17/1154	IR	W	4	3.5	0	3.5	3a+	3.5	4.5			3.5	T3.5/4.5/W1.5/24	35.2N	133E				D_S
17/2358	VIS	W	3	3-	0	3-	3f	3	4			3	T3/4/W1.5/24	36.3	132.3				I_{D_C}

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA West Pacific MONTH AUGUST DISTURBANCE NAME OR NUMBER ST not carried by Guam

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information				Remarks	Intl
				CF	BF	T								Present Lat.	Present long	Fcst Lat.	Fcst Long		
8/13	N4 IR							ST2	2				ST2/2 D1.0/24HRS	E 28N	166E				
22147/13	VIS	S	2					ST2	2				ST2/2/D0.5/	29N	166E				
0907/14	IR	S	2					ST2	2	S		2	ST2/2/S0.0/24	E 29N	166E				
1147	VIS	D	2.5					ST2.5	2.5	S		3	ST2.5/2.5/D0.5/	30.7N	165.5E				N/A
15/1002	IR	S	12HR 2.5					ST2.5	2.5			2.5	ST2.5/2.5/S0/12HRS	E30N	163.5E				
15/2209	VIS	W	1.5					ST 1.5	2.5			1.5	ST 1.5/2.5/W1/24	31N	161.5E				N/A
16/0002	IR	S	12HR 1.5					ST 1.5	2.5			1.5	ST1.5/2.5/W1.0/24	E31N	160E				
								No		CLAS									SH

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. PACIFIC MONTH AUGUST DISTURBANCE NAME OR NUMBER RITA

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information Present		Fcst		Remarks	Int l
				CF	BF	T								Lat.	long	Lat.	Long		
1/0232	NH VIS	D	1	1.5	0	1.5	a	1.5	1.5			2.5	T1.5/1.5/D1.0/24	~~E23N~~ E 16N	119.5E			TIED UP WITH LAND	DH
16/1250	IR	S	12HR 1.5	1.5	0	1.5		1.5	1.5			2.5	T1.5/1.5/D1.0/24HRS	E24N	119.5E				~~DB~~
17/0002	VIS	S	1.5	1.5	0	1.5	a	1.5	1.5			1.5	T1.5/1.5/S0.0/24HR	E23N	120E			NEAR LAND AND SLOW MVG SO CID NOT PUT ON DVLMT CURVE	IC
17/1149Z	IR	No	definite	center	to	classify,	but	numerous	suspect	areas	within	convection		15N	to	23N	btwn	115E & 150E	DV

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. PACIFIC MONTH [illegible] DISTURBANCE NAME OR NUMBER RITA

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information Present		Fcst		Remarks	Intl
				CF	BF	T								Lat.	long	Lat.	Long		
18/0000	UIS	D	1	1	0	1	e	1	1	A		2	T1/1/D0.5/24hrs	24N	130E			Amateur [illegible]	TDC
18/1200	IR	D	1	1	0	1		1	1			2	T1/1/D0.5/[illegible]	25N	[illegible]E				[illegible]
19/0056	UIS	D	2	2.5-	0	2.5-	2b+	2.5	2.5			3.5	T(2) 2.5/2.5/D1.5/24	25N	130E			strong 2 or weak 2.5	TDC
19/1145Z	IR	D	2	3	0	3		3	3			4	T3/3/D2.0/24HRS	E25N	128.8E				[illegible]
19/2345	UIC	D	3.5	3.5-	0	3.5	3.5+	3.5	3.5			4.5	T(3) 3.5/3.5/D1.0/24hrs	16.3N	129.3E				[illegible]
20/1[illegible]	IR	D	4	3.5	0	3.5	[illegible]	3.5	3.5	A		4.5	T3.5/3.5/D1.0/24	27.0N	130E			poor PIC QUAL.	[illegible]
21/0050	UIS	D	4.5	4-	.5	4.5	e	4.5	4.5			5.5	T(4) 4.5/4.5/D1.0/24hrs	28N	131.3E				[illegible]
21/1145	IR	D	4.5	3.5	1-	4.5-	e	4.5	4.5	A		5.5	T4.5/4.5/D1.0/24	30N	132E			EYE [illegible] RGD EYE	[illegible]
21/2350Z	UIS	D	5	3.5	1+	4.5	e	4.5	4.5	S		5	T4.5/4.5/D0.5/24	30.1N	133.5E			Performed [illegible] UIS [illegible] T4	[illegible]
22/1145	IR	D	5.5	4	1	5	(a) (e)	5	5		—	5	T5/5 D0.5/24 HR	33.2	133.7E			DISTINCT EYE	[illegible]
23/0000	VIS	W	3.5	3	0	3		3	4	R		3	T3/4/W1.5/24HR	36.0N	135.5E				
				(EXTRAPOLATED)										40N	141E				

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA West Pacific MONTH AUGUST DISTURBANCE NAME OR NUMBER TD#21 T/S SUSAN

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information Present		Fcst		Remarks	Intl
				CF	BF	T								Lat.	long	Lat.	Long		
24/	NH VIS	D	—					ST1.5	1.5				ST1.5/1.5 D/24HRS	23N	154E			STM APPEARS TO BE GOING TROPICAL	
25/	NH IR	D						1.5	1.5				DT1.5/1.5D/24	23N	153.5E				
25/2147	VIS	D						1.5	1.5			2.5	ST1.5/1.5/D/24	24N	154.0E				
25/1651	IR	D						2	2				ST2/2/D.5/24	27.5N	152.0E				
26/	VIS	D						2.5	2.5			3.5	ST2.5/3.5/D1.0/24	27.5N	152.0E				
27/	IR	W						2	2.5			1.5	ST2/2.5/W0.5/12	29.1N	151.6E				
27/2354	VIS	D		2.5	0	2.5		2.5	2.5	S		3	T2.5/2.5D0.5/24HRS	31.1N	151.8E				
28/1027	IR	D		DT 2.5	0	ST 2.5		2.5	2.5	S		3	T2.5/2.5/D0.5/24	34N	151.5E			POSSIBLY CEDROS TIFFAN PREVIOUS VIS	
28/2354	VIS	D		3.5	.5	4		3.5	3.5	S		4	T3.5/3.5/D1.0/24 HRS	34.7N	152.3E				
29/0030	IR	D		3.5	0	3.5		3.5	3.5		—	3.5	T3.5/3.5-/D1.0/24	36N	154.3E				
29/	VIS	D	4.5	4.5	0	4	a	4	4		—	4.0	T4/4 MANUAL/24	36.3N	156.8E				
29/0830	IR	D	4.5	4	.0	4		4	4		—	4	T4/4-/D0.5/24	37.2N	157.7E				
29/	VIS	W	3.0	3.0	0	3.0	a	3	4			3	T3/4 MANUAL/24	37.2N	158.5E				
31/0732	IR	W	3	2.5	0	2.5		2.5	3.5			2.5	T2.5/3.5/W1.5/24	39.0N	158.1E				
31/2332	VIS	W	2	3-	0	3-	3a	2.5	3			2	T2.5/3/W0.5/24	39.3N	157E				
01/1430	IR	W	1.5	2	0	2		2	2.5			1.5	T2/2.5/W0.5/24	40.7N	156.2E			SHOULD BE LAST CALL! RJB	
01/2222	VIS	W	1.5	1	0	1		1	2			1	T1/2/W1.5/24 HRS	41N	156E			NO CONVECTION	

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. PAC. MONTH SEPT. DISTURBANCE NAME OR NUMBER TESS

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information Present— Lat.	Position Information Present— long	Position Information Fcst Lat.	Position Information Fcst long	Remarks	Initi
				CF	BF	T													
31/0719	V-4 IR	D	1	1	0	1	C	1	1			2	T1/1.5	E 18.5N					
31/2135	VIS	D	12 HR 1.5	1.5	0	1.5		1.5	1.5			2.5	T1.5/1.5/D0.5/12HRS	16.9N	153.1E				
01/1013	IR	D	2	1.5+	0	1.5+		2	2			3	T2/2/D1.0/24	E 17N	151.4E				
01/2209	VIS	D	2.5	2.5	0	2.5	3a-	2.5	2.5			3.5	T2.5/2.5/D1.0/24HRS	17.8N	150.9E				
02/1008	IR	D	3	3	0	3		3	3			4	T3/3/D1.0/24HRS	E 19N	150E				
02/2203	N-4 VIS	D	3.5	3.5	0	3.5	3b	3.5	3.5	A		4.5	T3.5/3.5/D1.0/24	19N	149E				
03/1009	IR		4	4	0	4		4	4			5	T4/4/D1.0/24HRS	19.5N	149.2E			grid correction	
03/2203	VIS	D	4.5	2.5+	1.5-	4		4	4			5	T4/4/D0.5/24 HRS	20N	148.8E				
04/1105	IR	D	5	3	2	5		5	5			6	T5/5/D1.0/24HRS	22.5N	148E			grid correction	
04/2203	IR	D	5	3.5	1	4.5		5	5		-	5	T5/5 [illegible] D1.0/24	23.5N	[illegible]				
05/1105	IR	D	5	4	1.5	5.5		5.5	5.5	SL	-	5.5	T5.5/5.5-/D0.5/24HRS	25.7N	145.9E			grid correction	
05/2216	VIS	S	5	3.5	1.5-	5		5	5.5			5	T5/5.5/S0/24HRS	26.5N	141.6E				
06/1102	IR	W	4.5	4-	1-	5-	e	5	5.5			4.5	T5/5.5/W0.5/24 HRS	28.1N	145.1E				
06/2210	VIS	W	4.5	5-/5 4.5	0	4.5		4.5	5			4	T4.5/5/W0.5/24	E 28.3N	144.6E			WARNED 1 I/E	
07/1032	IR	N	4	3.5	.5	4-	e	4	5			4	T4/5/W1.0/24	29N	146.3E				
08/0905	VIS	W	3.5	2.5	.5	3		3	4			3	T3/4/W1.5/24 HRS	29.7N	146.3E			NO CCND NR CNTR.	

Tess (Cont.)

08/1457	IR	W	3	2.5	0	2.5	2C+	2.5	3.5			2.5	T2.5/3.5/W1.5/24HRS	30.3N	147.6E			GRID CORRECTION	
00/2305	VIS	W	2	2	L	2.0		2	3.0			2.0	T2/3/W1.0/24	30.3N	148E				
09/0959	IR	W	1.5	1.5	0	1.5	1.5d	1.5	2.5			1.5	T1.5/2.5/W1.0/24HRS	39.2N	150E				
09/2356	VIS	W		remaining		ct		(no	correction	at	all.)			39N	153.2E				

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. PACIFIC MONTH SEPT DISTURBANCE NAME OR NUMBER TD 11 / VIOLA

Date Time (Z)	Type Data	DSW	Model Exp. T	Data Prelim. T			Pattern Comp	Final T	Final C.I.	RSA	+ or -	Fcst. C.I.	Code	Position Information				Remarks	Intl
				CF	BF	T								Present Lat.	Present Long	Fcst Lat.	Fcst Long		
04/2330	VIS	D	1	3	0	3	f	2	2	R	+	3.5	T2/2 PLUS/D1.5/24HRS	15.6N	130.8E				DH
05/1159	IR	D	1.5	2.5	0	2.5		2.5	2.5			3.5	T2.5/2.5/D0.5/12HRS	E 15.8N	131E				DH
06/0015	VIS	D	3.5	2.5	1	3.5		3	3		+	4.5	T3/3+/D1.0/24	E 16.2N	131.5E			CNTR NOT VERY WELL DEF.	JTWB
06/1145	IR	D	4	3	0	3		3	3	S		3.5	T3/3/D0.5/24	E 19N	133E				SDC
06/2314	VIS	W	2	2	0	2		2	3			2	T2/3/W1.0/24	E 20N	135E			CNTR POOR	DJH
07/1155	IR	W	2	1	0	1		1	2			1	T1/2/W2.0/24	E 22N	136E			Very Wk	ADC
08/0008	VIS	W	NO CLASSIFICATION - TOO WEAK - NO CNTR																JTWB

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. PAC MONTH SEP DISTURBANCE NAME OR NUMBER WINNIE (T0412)

Date Time (Z)	Type Data	DSW	Model Exp. T	Data Prelim. T			Pattern Comp	Final T	Final C.I.	RSA	+ or -	Fcst. C.I.	Code	Position Information				Remarks	Intl
				CF	BF	T								Present Lat.	Present long	Fcst Lat.	Fcst Long		
07/1000Z	IR	D	1	1.5	0	1.5	a	1	1			2	T1/1/D1.0/24HRS	23.7N	162E			23.2N	
07/2212	VIS	D	1.5	1.5	0	1.5	af	1.5	1.5			2.5	T1.5/1.5/D1.0/24HRS	23.5N	161.8E			23.2N 162E	
08/0901	IR	D	2	2	.5+	2.5		2.5	2.5			3.5	T2.5/2.5/D1.5/24HRS	23.8N	163E			GRID CORRECTION	
08/2112	VIS	D	2.5	2	.5+	2.5	d	2.5	2.5	A		3.5	T2.5/2.5/D1.0/24	25.2N	164.2E				
09/0956	IR	D	3.5	3	1-	4-	4b-	3.5	3.5			4.5	T3.5/3.5/D1.0/24	27.1N	165.3E			GRID CORRECTION	
09/2205	VIS	D	3.5	3.5	0	3.5	35a	3.5	3.5	A		4.5	T3.5/3.5/D1.0/24	30.0N	163E				
10/0858	IR	D	4.5	3.0	1-	4-	e	4.0	4.0	S		4.5	T4/4/00 5/24 SLOW	31.5N	161.2E				
10/2238	VIS	D	4.5	3.5	1	4-	e	4	4	S		4.5	T4/4/D0.0/24HRS	34.0	161.5E				
11/0955	IR	S	4	3	1-	4-		4	4			4	T4/4/S0/24HRS	33.1N	162.9E				
11/2157	VIS	W	3	2.5	.5	3	b	3	4			3	T3/4/W1.0/24HRS	41.7N	169.6E				
12/0857	IR		Extra - Interval											44.5N	176.5E				

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. Pac MONTH Sept 75 DISTURBANCE NAME OR NUMBER T.D-13 ALICE

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T CE	BE	T	Pattern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position-Information Present Lat:	Present Long	Fcst Lat:	Fcst Long	Remarks	Initl
15/005Z	VIS	D	1	1	0	1	f	1	1			2	T1.1/D0.5/24HRS	11.3N	130.4E			relocated 2 12.8N 131.8E	RHD
15/1132	IR	D	1.5	1.5	0	1.5	a	1.5	1.5	A		2.5	T1.5/1.5 D1/24 HRS	13N	130.5E				FJS
15/2351	VIS	D	2	2	0	2	c	2	2			3	T2/2/D1.0/24 HRS	13.8N	129.4E				
16/1232Z	IR	D	2.5	2	.5	2.5		2.5	2.5			3.5	T2.5/2.5/D1.0 24	13.6N	127E				SH
17/0046	VIS	D	3	2.5+	1	3.5+	4d	3.5	3.5		—	3.5	T3.5/3.5-/D1.5/24	14.9N	124.1E				
17/1128Z	IR	D	3.5	3.0	1	4	4d	4	4		—	4.0	T4/4-/D1.5/24	15.2N	122.5E				SH
18/0140	VIS	W	12HR 3.5	2.5	1-	3.5-		3.5	4		+	4.0	T3.5/4 PLUS/W0.5/12	16N	120.2E				
18/1232Z	IR	W	3.0	3.5	0	3.5	3.5A	3.5	4	A		4.0	T3.5/4 PLUS/W0.5/24	17.1N	116.2E				SH
19/0040	VIS	D	4.5	2.5	1+	3.5+	4d	4	4			5	T4/4/D0.5/24HRS	17.6N	119.8E				
19/1232Z	IR	W	12 HR 3.5 MC	3	.5	3.5		3.5	4			3	T3.5/4/W0.5/24HRS	19.4N	110.5E			over land	PHC
20/0133	VIS	W	3	2	.5	2.5		2.5	3.5			2.5	T2.5/3.5/W1.5/24HR	19.4N	109E			GRID CORRECTION	
20/1232Z	IR		INLAND									NO	CLASS.	20N	105E				SG

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. Pac MONTH Sept DISTURBANCE NAME OR NUMBER TD-14 BETTY

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information Present		Fcst		Remarks	Intl
				CF	BF	T								Lat.	long	Lat.	Long		
16/2251	VIS	D	1+	1.5	0	1.5		1.5	1.5			2.5	T1.5/1.5/D1.0/24HRS	13.8N	144.3E				DB
17/1128Z	IR	D	1	2-	5-	2		2	2			3.0	T2/2/D1.0/24	E16N	141E				SH
17/2345	VIS	D	2.5	2+	.5-	2.5		2.5	2.5			3.5	T2.5/2.5/D1.0/24HR	15.7N	139.2E				DB
18/1629	IR	D	3	2	5	2.5		2.5	2.5			3.5	T2.5/2.5/D0.5/24	16.8N	137.8E				SH
19/0040	VIS	D	3.5	2.5-	.5+	3		3	3			4	T3/3/D0.5/24	17N	138.3E				SH
19/1123	IR	D	3.5	3-	.5+	3.5		3.5	3.5			4.5	T3.5/3.5/D1.0/24HR	17.2N	137.8E				
19/2339	VIS	D	4	3	1.5-	4.5-	4f	4	4			5	T4/4/D1.0/24	18.9N	134.8E				DB
20/1220	IR	D	4.5	3.5	1	4.5		4	4			5	T4/4/D0.5/24	21.5N	131.5E				
21/0033	VIS	D	5	3.5	1.5-	5	5c	5	5			6	T5/5/D1.0/24	21.9N	129E				
21/1121Z	IR	D	5	4.5 (B-MW)	1 (DG)	5.5		5.5	5.5			6.5	T5.5/5.5/D1.5/24	23.2N	125.9E				RB
22/0127	VIS	D	6	5 (6-1)	.1	6	6c	6	6	A		6.5	T6/6/D1.0/24	22.2N	123.5E				SH
22/1715	IR	W	4.5	4.5	.5	5		5	5.5	S		5	T5/5.5/W0.5/24	22.5N	120E				RJ
23/0028	VIS	W	5	2	2	4	d	4	5	R		4	T4/5/W2.0/24	22.8N	119E				SH
													over land						

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. PAC. MONTH OCT DISTURBANCE NAME OR NUMBER T[illegible] CORA

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information				Remarks	Intl
				CF	BF	T								Present Lat.	Present long	Fcst Lat.	Fcst Long		
01/1015	VIS	D	1	1	0	1		1	1			2	T1/1/00hr/72y	12.5N	133.5E			[illegible]	[illegible]
01/1054	IR	D	1	1.5	0	1.5	C	1.5	1.5			2.5	T1.5/1.5/D 1.0/24	~15N	133.5E				SH
01/1510	VIS	D	2	3	.5	3.5		3	3	R		4.5	T3/3+/01.0/24y	17.0N	132.6E			ALMOST T4	[illegible]
02/1150	IR	D	12HR 3.5	3	1-	4-		3.5	3.5			4.5	T3.5/3.5/D0.5/12	E19.7N	130.8E			GRID MARKS OUR STORM GRID CORRECTION	[illegible]
03/0001	VIS	D	4	3.5	.5	4		4	4	A		5	T4/4/01.0/24	21.5N	129E				[illegible]
03/1015Z	IR	D	4.5	4-.5 3.5	1-	4.5-		4.5	4.5			5.5	T4.5/4.5/D1.0/24	23.9N	128.8E				[illegible]
04/0055	VIS	D	5	4-	1	5-	e	5	5			6	T5/5/D1.0/24HRS	26.3N	[illegible]				[illegible]
04/1148	IR	D	5.5	5	.5-	5.5-		5.5	5.5		-	5.5	T5.5/5.5-/D1.0/24	29.2N	131.2E			GRID CORRECTION	[illegible]
04/2356	VIS	D	6	6-	0	6-	b	6	6		-	6	T6/6-/D1.0/24HRS	31.7N	135E				[illegible]
05/1015	IR	W	12HR 5.5	5.5-1: 4.5	1	5.5	a	5.5	6			5	T5.5/[illegible]/D1.5/[illegible]HRS	34N	[illegible]E			[illegible] Eye	[illegible]
[illegible]/2015	VIS	W	5.5	2.5	.1	3.5		4	5	R		3.5	T[illegible]	[illegible]N	151E			[illegible]	[illegible]
06/0951	IR			Extra-Tropical										35.5	157E				[illegible]

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

DORLS

OCEANIC AREA W. PACIFIC MONTH OCT. DISTURBANCE NAME OR NUMBER 71 -16

Date Time (Z)	Type Data	DSW	Model Exp. T	Data Prelim. T			Pattern Comp	Final T	Final C.I.	RSA	+ or -	Fcst. C.I.	Code	Position Information Present		Fcst		Remarks	Intl
				CF	BF	T								Lat.	long	Lat.	Long		
03/0200	VIS	D	1	2	0	2		1.5	1.5	R	+	3	T1.5/1.5+/D1.0/24	14N	111E			DOC NOT SENT OVE VIETNAM AREA	R
03/1244	IR	D	12HR 2	2	0	2		2	2			3	T2/2/D0.5/12	E15N	111E				
04/0101	VIS	D	2.5	2.5	0	2.5	c	2.5	2.5			3.5	T2.5/2.5/D1.0/24HRS	E16.6N	111.6E				
04/1332	IR	D	3	2.5	.5	3	3b	3	3			4	T3/3/D1.0/24HRS	E17.8N	112.6E				
05/0155	VIS	D	3.5	3-	.5	3.5-	c-e	3.5	3.5			4.5	T3.5/3.5/D1.0/24HRS	18.8N	112.2E				
05/1245	IR	D	12HR S 3.5	3+	0	3+	3a+	3.5	3.5		-	3.5	T3.5/3.5-/D0.5/24	21.0N	113.1E			[illegible]	
06/0055	VIS												overland at	23N	113E				

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. Pac. MONTH OCT. DISTURBANCE NAME OR NUMBER TD #17 ELSIE

Date Time (Z)	Type Data	DSW	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	RSA	+ or -	Fcst. C.I.	Code	Position Information Present		Fcst		Remarks	Intl
				CF	BF	T								Lat.	long	Lat.	Long		
07/2352	VIS	D	1	1	0	1	e	1	1	A		2	T1.1/00.5/24HRS	12.1N	137.8E				1.0
08/1104	IR	D	2	1.5	.5	2.5		2.5	2.5			3.5	T2.5/2.5/01.5/12	14.5N	135.5E				3.5
10/0015	VIS	D	2	3-	.5	3.5-	3e	3	3	R	+	4.5	T3/3+/D2.0/24HRS	16N	133.9E				3.0
10/1129	IR	D	3.5	2-	2	4	3c	3.5	3.5	R		5	T3.5/3.5/D1.0/24HRS	18.5N	130.5E				4.5
10/2346	VIS	D	RAPID 4.5	4-	1-	5-	4a+	4.5	4.5	R	+	6	T4.5/4.5+/D1.5/24	17.9N	127.7E				4.5
11/1225	IR	D	RAPID 5	6	.5	6.5		6	6	R		7	T6/6/D1.5/12HRS	19.5N	124.8E			CNTR CORR. ~1/2° TO SSE.	5.5
12/0039	VIS	D	RAPID 6	4.5+	2-	6.5-	6d	6.5	6.5	R		7.5	T6.5/6.5/D2.0/24HR	20.3N	122.9E			+1 DEG ADJ N-S	6.5
12/1330	IR	D	7	5.5	1	6.5	6.5	6.5	6.5	S		6.5	T6.5/6.5/00.5/24	21.3N	120.1E				6.0
13/0135	VIS	W	5.5	4	1.5	5.5	5a+	5.5	6.5	A		5.5	T5.5/6.5/W1.0/24	21.6N	118.7E			GRID CORRECTION +.4 N -.5 E	5.5
13/1221	IR	P12H	6.	4	2	6	5.5	6	6	A		6.5	T 6/6 /00.5/12	21.6N	117.2E				6.0
14/0035	VIS	S	5.5	4	1+	5+	5a+	5.5	5.5			5.5	T5.5/5.5/S0/24	21.8N	115.1E				5.5
14/1316	IR	W	5	3+	1+	4.5	b	4.5	5.5			4	T4.5/5.5/W1.5/24	22N	113.7E			GRID CORRECTION -.6 lat +.1 long. =	4.5
15/				over Land										E23N	111W				3.5

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. PAC. MONTH OCT DISTURBANCE NAME OR NUMBER TD#18.

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information Present		Fcst		Remarks	Intl
				CF	BF	T								Lat.	long	Lat.	Long		
14/2337	VIS	D	1	1	0	1	1c	1	1			2	T1/1/D0.5/24HRS	E13.5N	140E			GRID CORRECTION +.5N	
15/1018	IR	D	1	1.5	0	1.5		1	1			2	T1/1/00.5/24HRS	≤13.5N	136E				
15/2032	VIS	S	1	1	0	1	(f)	1	1			1	T1/1.5/0/24HRS	≤13.5N	133E			GRID CORR 1/2°	
16/1112	IR	D	2	1.5	0	1.5	c	1.5	1.5			2.5	T1.5/1.5/D0.5/24HRS	E 10.5N	133.5E			Relocated Grid Correction	
16/2332	VIS	D	2	1.5	0	1.5	b	1.5	1.5			2.5	T1.5/1.5/D0.5/24HRS	E13.9N	131.3E			Position 11N 132.2E	
17/1208	IR	D	2.5	2	0	2		2	2			3	T2/2/00.5/24HRS	≤14N	126E			PSTN REFORMATION	
18/2332	VIS	D	2.5	2+	0	2+		2	2			3	T2/2D0.5/24HRS	14N	122.5E				
18/1304	IR	S	2	2	0	2	2c	2	2		+	2.5	T2/2+/S0/24	16.4N	120.8E			GRID CORRECTION −.4° N-S	
19/0132	VIS	S	2	2	0	2	2c	2	2		+	2.5	T2/2+/S0.24HRS	18N	120E	—	—	CNTR VERY IRREG DIA.	
19/1206	IR	W	1	1	0	1		1	2			1	T1/2/W1.0/24HRS	≤19N	≤122.5E	GRID CR. 1/2°		ASSESSMENT SHIPREPS IS/ STRONG WINDS	
20/0021	VIS							1.5	TD										

TROPICAL DISTURBANCE CLASSIFICATION WORKSHEET

OCEANIC AREA W. PACIFIC MONTH OCTOBER DISTURBANCE NAME OR NUMBER TC FLOSSIE

Date Time (Z)	Type Data	D S W	Model Exp. T	Data Prelim. T			Pat-tern Comp	Final T	Final C.I.	R S A	+ or -	Fcst. C.I.	Code	Position Information Present		Fcst		Remarks	Intl
				CF	BF	T								Lat.	long	Lat.	Long		
20/0212Z	NRL VIS	D	1	1.5	0	1.5	2(c)	1.5	1.5	A		2.5	T1.5/1.5 D1.0/24HR	14.5N	117.5E				FJS
20/1259	IR	D	12 HR 2	2	0	2	2c	2	2			3	T2/2/D0.5/12HRS	15N	117E			-.8°N + 1°E GRID CORRECTION	DD
21/0112	VIS	D	2.5	2.5	0	2.5	3a	2.5	2.5	A		3.5	T2.5/2.5 D1.0/24	15.5N	116.2E				FJS
21/1200Z	IR	D	3	3	0	3	e	3	3	A		4	T3/3/D1.0/24HRS	16.8N	115.3E				RMG
22/0210Z	VIS	D	3.5	3.5	.5	4		4	4			5	T4/4/D1.5/24	17.8N	115.2E				RJB
22/1256	IR	D	4	3.5	.5	4		4	4			5	T4/4/D1.0/24HRS	19.1N	113.2E			19.1 - 0.5	RMG
23/0110	VIS	W	3	3	0	3		3	4		-	2.5	T3/4MINUS/W1.0	20N	111.5E				RJB
23/1351	IR					over	land	mass						23N	108E				RMG